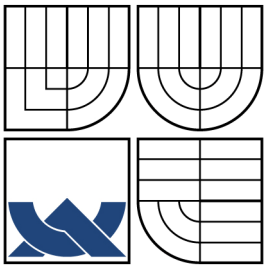

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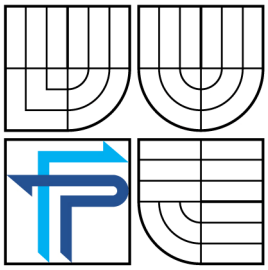

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FACULTY OF BUSINESS AND MANAGEMENT
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OCENĚNÍ SPOLEČNOSTI PRO POTŘEBY BANKOVNÍHO FINANCOVÁNÍ

APPRAISEMENT OF COMPANY FOR PURPOSE OF BANKING FINANCING

DIPLOMOVÁ PRÁCE
MASTER'S THESIS

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BRNO 2009

Zadání práce

Abstract

Techniques of assessment of company value especially for purpose of banking financing are the main subject matters of this master´s thesis. Company appraisement questions are described from the theoretical, as well as from methodological point of view. Thesis reports the specifications of valuation in relation to business branch. It also seeks for optimal solution for successful credit proceeding.

Abstrakt

Způsoby stanovení hodnoty společnosti především za účelem bankovního financování jsou hlavním tématem této diplomové práce. Problematika oceňování společnosti je popsána jak z teoretické stránky věci, stejně jako z metodologické stránky věci. Práce popisuje specifika ocenění v závislosti na oboru podnikání a snaží se nalézt optimální řešení k úspěšnému úvěrovému řízení.

Key words

Company valuation, Bank financing, Objectified value, Discounted Cash Flows, Bank Collateral, Weighted average costs of capital, Net Capitalization, Credit conditions, Company valuation methods.

Klíčová slova

Ocenění podniku, bankovní financování, objektivizovaná hodnota, diskontované peněžní toky, bankovní zajištění, průměrné vážené náklady kapitálu, čistá kapitalizace, úvěrové podmínky, metody ocenění společnosti.

Bibliographic citation

KELEŠEVOVÁ, Z. *Ocenění společnosti pro potřeby bankovního financování*. Brno: Vysoké učení technické v Brně, Fakulta podnikatelská, 2009. 83 s. Vedoucí diplomové práce doc. Ing. Stanislav Škapa, Ph.D.

Author´s declaration of thesis originality

I declare, that the master´s thesis on the topic Appraisement of Company for Purpose of Banking Financing I worked out independently with using cited literature and data.

Content

1. Introduction

This thesis is concerned with possibilities and methods of company valuation for the bank financing purposes of business activities. Bank finances are in currently uncertain financial environment again the mostly sought after source of external moneyed resources. These resources covers various business activities, both operating and investment.

Regarding to recent events on the financial market leading up to global financial crisis are the conditions for obtaining mentioned above resources more complicated and tightened. Owing to economic decrement banks became more cautious and they began to check clients´ creditworthiness in detail considering the riskiness of propriate economic sector. As well banks require collateral of bank credit or clients´ participation on the loan.

Credit or loan collateral can have following forms. The most widely way of credit security is right of lien to assets, both movables and immovable, than personal guarantee or collateral in form of business share. Determined value of collateral doesn't represent the final amount of credit advanced, globally the Loan to value ratio declined and it is floating around 60%.

Banks are businessmen and they are always willing to negotiate. The better creditworthiness – by the other words higher value of collateral, the better bargaining position for client. Consequently is very important to choose appropriate financial institution and suitable collateral and its valuation method.

In my thesis is company respectively business share considered as the collateral possibility while company appeals for bank loan. Further I effort to find adequate method of company valuation and to determine the best apposite value of business share.

2. Objectives and specifications of thesis

The main objective of diploma thesis is company appraisement of company for purpose of getting bank loan, as follows from introduction. Company valuation and its usage for obtaining bank loan is very broad issue. Therefore is necessary to define fields which will be subjects of interest in thesis. These subjects can be divided into two groups.

The first subjects of interest are general possibilities of banking finances. Analysis of banking environment and its products will be focused on current situation of credit market, which is derived from financial market. As was said before, the financial market suffered decline and its´ supposed development has been dramatically changed. From this aspect are evaluated certain credit conditions of certain banking institutions. Partial aim is the analysis of bank loans possibilities and conditions.

Second field of interest involves possibilities of company appraisement, which serves as loan collateral. Here is the company valuation considered in three levels: market valuation, return valuation and property valuation. Consequently has to be established final values of certain valuation methods, which can be market value, subjective value and objectified value. Regarding to fact, that we are looking for appropriate valuation method for the banks purposes, the analysis and resume of valuation methods will be focused on methods determining objectified value. Second partial aim includes the choice of adequate valuation method of 100% business share of ABC Brno, s.r.o.

The third partial aim of diploma thesis is final valuation of 100% business share ABC Brno, s.r.o. on the base of previous chosen appropriate valuation method, which will serve as loan collateral. Final valuation calculation precedes analysis of ABC Brno, s.r.o., which is divided into internal and external analysis of factors influencing objectified value of company.

Internal analysis describes subjects of enterprise, markets being operated, current economic situation and historical development of economic outcomes and last but not least prognosis of future business activity on the base of elaborated financial plan.

External analysis represents current situation, historical development, and forecasts of markets, economy and sector.

Results of this analysis will enable the final valuation calculations with using appropriate method. Suggestions to ABC Brno, s.r.o. should help to find bank institution, which has a will to communicate credit conditions and to accept my final valuation as collateral of a loan.

My thesis should increase probability to gain business loan for company and further better understanding of advantages and disadvantages of business share collateral for a bank. This includes understanding of business share collateral not only as value of company´s property or book value, but also as return value of company based on net capitalization or discounted cash flow methods.

3. Theoretical Resources

3.1. Bank financing of a company

The decision making about structure of company finance is one of the most important. In Europe small and middle enterprises uses as the external finance source mainly financial institutions – banks. Usually banks provide the financial sources for investment and operating activities and more likely to companies with sustainable growth, which make business longer time on the market. The most common bank products are certain form of loans.

Czech Commercial Code defines the Loan as contractual relationship between creditor who is lending certain amount of money on request of debtor and debtor who is covenant to repay all sum paid and pay up the interests. The loans perform two important functions. (25) Firstly loan enables to creditor to deposit money and their improvement. Secondly loan facilitates to debtor to buy an assets even if debtor doesn´t dispose enough own money to realize his prospectus.

Providing loans is enacted by Czech Bank Act as the essential activity of banks (23). This activity ranks among the active credit transactions. These transactions brings main source of bank return thanks to credit interests. For debtors the interests express costs. In case of companies the loan interests express significant part of *costs of foreign capital* (10). Each financial institute with licence to provide the loans offer a large number of various loans.

3.1.1. Types of loans (credit)

The enumeration of all specified loans offered only on Czech financial market would take proper piece of this thesis. Instead of that let´s assume the basic division of loans. We can distinguish loans according to following angles:

- term of expiration,
- type of currency (domestic currency and exchange)
- collateral,

- purpose and object (16).

3.1.2. Credit term expiration

Based on term expiration literature distinguishes three fundamental groups of loans: firstly short-term, secondly intermediate-term, and thirdly long term loans.

3.1.2.1. Short-term loans

The term of expiration is no longer than 1 year. The most common short term loans are showed in following table:

Bank overdraft	• widely spread type • serve as current account • drawings are quick and easy, payments are automatically transacted from account incomes • higher interest rate
Paper-credit	• The base of this loan is paper - bill • It has two forms: discount credit and acceptance credit
Loan against securities	• It is provided for securities of movable assets (papers, goods, claims, noble metals, etc.)
Guarantor´s credit	• Bank provides the guarantee to pay the liabilities instead of its client, if the client is in current financial shortcoming
Revolving credit	• Possibility to loan drawdown repeatedly • That facilitates the credit procedure.

Table 1. Overview of short-term loans.

3.1.2.2. Intermediate-term credit

Literature features the term of expirations is for these loans somewhere between 4 or 5 years. The most common intermediate-term loans are showed in following table:

Consumer credit	• It is given only to individuals in following forms: • Personal loan – is given to client in cash, • Acquisitions loan – bank pays instead the client full acquisition price, • Supplemental loan – bank pays instead the client a part of acquisition price

Issuing loan	• The base is the issue of long term papers • Issuer can issue the securities (bonds) by the medium of bank, bank will receive the reward.

Table 2. Overview of intermediate-term loans.

3.1.2.3. Long-term loan

Term of expiration is longer than term of expiration of intermediate-term credits. The most common long term loans are showed in following table:

Mortgage loan	• It is provided against to estates • The purpose is only to acquire the real estate • interest rates are lower, this loan bears some tax advantages • The given amount is taken by market valuation of estate
Mortgage	• It is also provided against to estates • There is any purpose • interest rate is higher

Table 3. Overview of long-term loans.

3.1.3. Collateral

Collateral means for a bank to obtain alternative source of income (instead payments) in case of debtors (clients) financial shortcoming. By the other way just for case when client doesn't dispose enough amount of finance to pay regularly credit payments. This situation may be happen even the previous analysis of client or firm standing was positive. The reason lies in changes in economic environment.

Most of loans require collateral. Banks try to avoid unpaid claims mainly by checking of clients standing, than limitation of loan amount, diversification of risk through consortium credit and last but not least control of loan objects (18).

3.1.3.1. Collateral instruments

We can distinguish collateral according two angles. The first angle is the form of collateral (personal or material) and the second angle consider the relation between

collateral and ensured bank claims (accessory and abstract). Accessory collateral is inseparably related to object of loan, it means when the object is abolished, the collateral expires too. Abstract collateral represent the right, which is independent on the object of loan (18). Synoptic distinction is presented in following table.

Collateral instruments	Personal	Material
Accessory	Personal liability	Chattel mortgage, right of lien
	Banker´s indemnity	Mortgage right to real estate
Abstract	Depot bill	Assignments of claims and rights
		Abstract right of lien

Table 4. Overview of collateral instruments

3.1.3.2. Personal collateral

Czech Commercial Code defines *personal liability* as relationship between creditor (bank) and personal surety (third party) subsequently: “Who gives the written statement about settle creditors claims on behalf of debtor (if debtor cannot pay his liabilities), he is becoming the surety.” (25)

Specified form of personal collateral is bills and checks aval, where the surety gives security for bills or checks obligated person (18).

Banker´s indemnity is also defined in Czech Commercial Code as follows: “Banker´s indemnity accrues from written statement in bail bond, that bank will discharge claims to creditor, up to certain amount contained in bail bond, if the debtor (third party) doesn’t carry out the obligations or he doesn’t fulfil other conditions stated in bail bond.” (25)

The *depot bill* doesn´t serve as payment or credit instrument, but only as securing instrument. It is issued by receiver of loan (debtor) on behalf of bank, usually in form of blank bill. The bank doesn´t put depot bills into circulation, these bills are deposited in bank (16).

3.1.3.3. Material collateral

Material collateral gives bank the right on value of property (assets), which are usually the property of client (debtor).

The *right of lien* as the collateral accrues from written mortgage contract concluded between bank and client. The mortgage contract has to include the object of collateral (mortgage) of claims. The objects are usually assets (properties), real estates, papers or claims (18).

Czech Civil Code defines the right of lien as follows: “The right of lien serves as security for a claim, just for case when the debt related to this claim will not be extinguished in time. To settle the claim can be reached through conversion assets (collateral) into money (24).

Assignment of claims and rights consist in loan receivers´ declaration that he assigns to bank (creditor) his own claims toward the third party as collateral of received bank loan. Assigned claims settlement goes to clients´ bank account thereby bank can control the claims settlement. It means that the claims are not the part of loan payments. Income from these claims on the bank account would pay the loan only in situation, when client would be in financial shortcoming (18).

3.1.4. Loan rate

Loan rate can be assessed in loan contract as follows:

- *fix interest rate*, this interest rate is constant all expiration term ;
- *flexible interest* rate is changing during the loan expiration term; The way of changes may be draw up subsequently:
  - Loan rate can immediately copy certain interest rate. Usually the loan rate copies the basic bank interest rate, which bank itself declares. The dates of rate changes are unknown in the moment of loan contract settlement. This way of interest running is called *floating rate.*

- Loan rate can be related to certain market interest rate. The dates of loan rate adjustment to market interest rate are fixed. The loan rate is changing in regular intervals and adjusting in an amount of reference rate. As *reference rate* are basically used market interest rates LIBOR or PRIBOR, FIBOR, EURIBOR, etc. This way of interest running is called *variable rate* (16).

3.2. Reasons for company appraisement

Appraisement is a service by itself, provided to a customer with various needs and goals. Therefore we divide appraisements according to different instigation and purposes. Practical division (especially in Czech business environment) is mentioned in Mařík, M., (2003) (12) and determines appraisement related or not related to change of ownership. Changes of ownership occur with purchase and sale of company, with non-monetary investment into corporation, with merger or separation of a company, etc. The need of appraisement in cases mentioned above designates Czech Commercial Code. Appraisement when doesn´t occur ownership change might bear ship to changes in legal form of company, *mainly to granting credit* (estimation of financial collateral of a loan) and to dissolution of a company, etc. Each appraisement action should include clear definition of instigation and what category of value and why is convenient to determine.

Knowing what an asset is worth and what determines that value is a pre-requisite for intelligent decision making (in choosing investments for a portfolio, in deciding on the appropriate price to pay or receive in a takeover and in making investment, financing and dividend choices when running a business). (5) The main purpose of financial appraisement is an expression company value in monetary units. Before we choose certain method of financial appraisement, we have to consider the instigation and appoint the value of company.

From the Value point of view authors divide the three basic types of valuation:

- Subjective (investment) Valuation

This method determines Investment Value of Worth, what represents value of assets for concrete investor (or group of investors) with established future investment goals. This subjective judgement on a company joins together specific assets with investors´ individual expectations.

Subjective valuation approach is advisable for purchase or sale of company decision or in case of dissolution or rescue a firm (13).

- Market Valuation

This method determines Market Value. International Valuation Standards Committee defines Market Value as “the estimated amount for which a property should exchange on the date of valuation between a willing buyer and a willing seller in an arm's-length transaction after proper marketing wherein the parties had each acted knowledgeably, prudently, and without compulsion” (9).

Market value is independent of concrete subject and should express a kind of average market expectation about company future. This appraisement is useful with placing company on Stock Exchange, or in case of sale of corporation with no concrete prospective buyer (13).

- Objectified Valuation

Objectified Value should not be dependent on individual expectations. This valuation is based on facts and data about current situation in company.

This method is especially in German speaking and other continental European countries advisable for credit granting and for investigation of standing of a firm (13).

3.3. Methods of financial valuation

Financial appraisement examines three basic approaches that can be used to value a company. The first is based on return analysis, the second approach relates to market value of a company using a market analysis and the third, property valuation, estimates a company value based primarily on asset analysis.

- Return analysis Methods

- Discounted Cash Flow Valuation
- Net Capitalized Return Valuation
- Compound Return Valuation
- Economic Value Added Valuation (12).

This group of valuation methods appears from the theory that value of an asset is determined by expected benefit for its holder. Before an interpretation of specific methods let´s assume the criteria for returns.

When we are seeking for Market Value, returns of estimated company are expected by the certain market. These expected returns are consequently discounted with discount rate at the level of required productiveness on the market.

Investment Value of Worth considers returns expected by concrete individual. These are discounted by investors´ required productiveness.

Objectified Valuation use returns which will be with high probability reach from today´s point of view. It means growing opportunities which seem to be today sustainable and indisputable.

- Market analysis Methods

- Market Capitalization Method
- Similar Public Company Method
- Recent Acquisitions Method
- Initial public offerings Method

Market analysis valuation methods avoid some problems of return methods. Appraisement is connected with market data rather than with accountant data. All market imperfections affect the Market Valuation results.

- Property analysis Methods

- Book value of Equity
- Breakup Value
- Substance Value based on reproduction price
- Substance Value based on costs saving

This group of methods imply a detection of property base of company. Property Value is defined as summary of individually valuated property items (14).

3.4. Company valuation procedure

Before the start of valuation procedure, it is necessary to clear up the reason for appraisement and what value should result the valuation process. The choice of methods and techniques is subordinated to expected functions of appraisement.

Eva Kislingerová (11) specified following phases of company valuation procedure:

1	Definition of abstract labour and purpose specification of appraisement
2	Creating of working team
3	Time planning of the labour, setting the dates.
4	External and internal data collection
5	Data analysis – financial and strategic analysis
6	The choice of methods in relation to purpose of valuation
7	Valuation, application of methods into analysis
8	Synthesis of findings and preparing the final statement
9	Statement about the market value of a company on the certain date

Table 5. Phases of valuation procedure.

3.5. Return analysis methods

3.5.1. Discounted Cash Flow Valuation

This method is widely spread primarily in United States and United Kingdom, but also managers from other countries are getting awareness of Discounted Cash Flow (further DCF) Valuation and its advantages and disadvantages. “In DCF valuation, the value of an asset is the present value of the expected cash flows on the asset, discounted back at a rate that reflects the riskiness of these cash flows” (3). We estimate the value of an asset as the present value of the expected cash flows on it

$$Value = \frac{E(CF_1)}{(1+r)} + \frac{E(CF_2)}{(1+r)^2} + \frac{E(CF_3)}{(1+r)^3} + \ldots \frac{E(CF_n)}{(1+r)^n} \quad \text{,where}$$

n = life of assets; $E(CF_t)$ = expected CF in period t; r = discount rate reflecting the riskiness of the estimated cash flows.

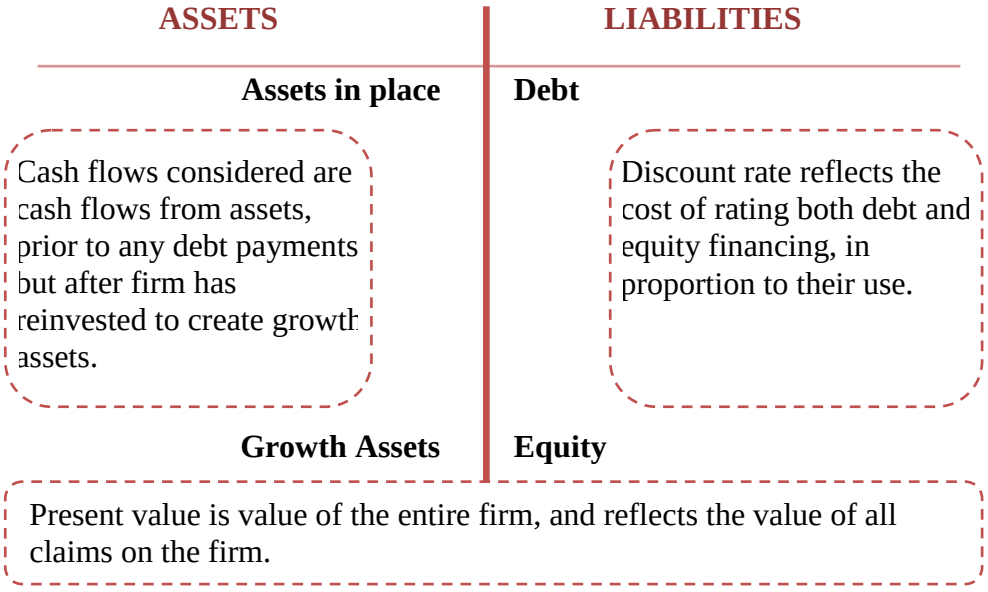
Every asset has an intrinsic value and we try to estimate that intrinsic value by looking at asset´s fundamentals. The problem is that none of us has full access to all information available right now. But we all aspire to be as close to the true intrinsic value as it is possible.

There are three distinct ways in which we can categorize DCF models:

- Firm (Entity) Valuation
- Equity Valuation
- Variations on DCF models (Adjusted Present Value)

3.5.1.1. Firm (Entity) Valuation

This DCF valuation approach value the entire business, with both assets-in-place and growth assets.



Picture 1. Firm (Entity) Valuation (3)

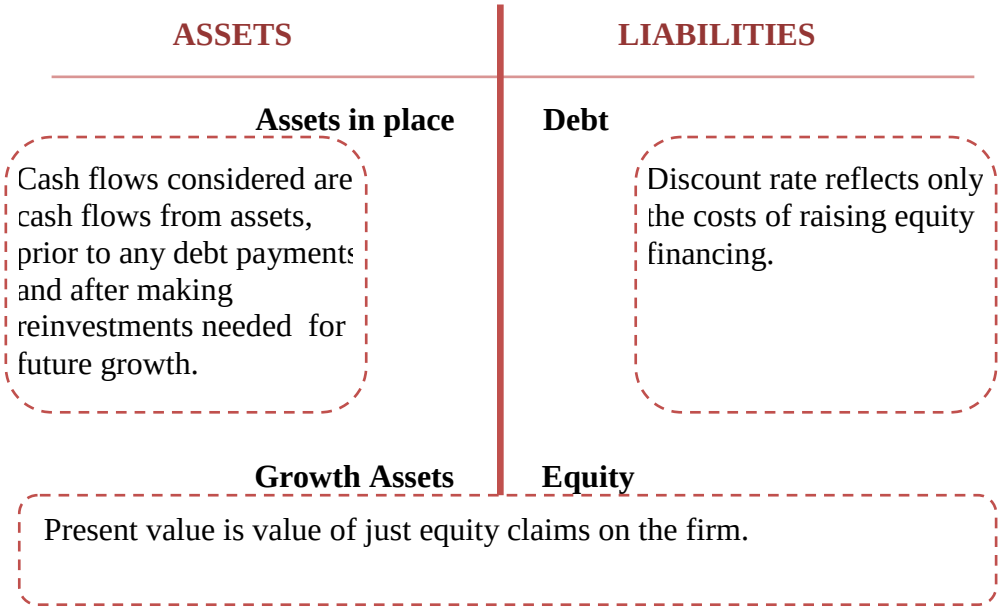
The CF before debt payments and after reinvestment needs are called *free cash flows into the firm* (FCFF), and the discount rate that reflects the composite costs of financing from all sources of capital is called *costs of capital.*

Technique of DCF Entity method is divided into two steps. The first step is to summarize all CFs flowing to owners and to creditors and consequently to discount them. First step is showing the gross value of company (in the one whole entity sense). In second step we subtract debts from gross value and we will get as a result the owned capital (equity) value.

Entity Valuation use firms which have leverage which is too high or too low, and expect to change the leverage over time, because debt payments and issues do not have to be factored in the cash flows and the discount rate (cost of capital) does not change dramatically over time. Also this method use firms which have partial information about leverage (e.g. interest expenses are missing) and all other firms which have bigger interest into valuing the firm than equity. In Czech business environment is this method considered as basic and it is in principal only one DCF valuation method applied there.

3.5.1.2. Equity Valuation

This method just value the equity stakes in a business.



Picture 2. Equity Valuation (3)

The cash flows after debt payments and reinvestment needs are called *free cash flows to equity* (FCFE), and the discount rate that reflects just the cost of equity financing is the *cost of equity*. Technique of DCF Equity method appears from CFs pertaining only to owners, which are consequently discounted. We get as a result owned capital (equity) value (3).

Equity Valuation is used for firms which have stable leverage whether high or not and if equity (stock) is being valued.

3.5.1.3. Variations on DCF models (Adjusted Present Value)

We distinguish two variants of use of DCF models. The first one is called Excess Return Model. We can present DCF model in terms of excess return, with the value being written as:

Value = Capital Invested + Present value of excess return on current investment + Present value of excess return on future investment.

In the second Adjusted Present Value (APV) model the value of the firm is written as the sum of the value of the firm without debt (the unlevered firm) and the effect of debt on firm value.

Value of business = Value of business with 100% equity financing + Present value of Expected Tax Benefits of Debt – Expected Bankruptcy Costs

The unlevered firm value can be estimated by discounting the free CF to the firm at the unlevered cost of equity. The tax benefit of debt reflects the present value of the expected tax benefits. In its simplest form,

*Tax Benefit = Tax rate * Debt*

The expected bankruptcy cost is a function of the probability of bankruptcy and the cost of bankruptcy (direct as well as indirect) as a percent of firm value (5).

3.5.2. Inputs into Discounted Cash Flows Models

3.5.2.1. Expected Cash Flows to DCF models

The CF to the firm is the cumulated cash flow to all holders and creditors in a company (4). We obtain the CF prior to debt and preferred dividend payments, by subtracting from after tax operating income the net investment needs to sustain growth (11). This cash flow is called the *free cash flow to the firm (FCFF)* and is used with DCF Firm (Entity) valuation. Basic formula can be written as:

*FCFF = EBIT * (1-tax rate) + Depreciation – Capital Spending*

– Change in working capital.

Some Czech authors such as Mařík and kol (12) suggest the Net operating profit after tax (NOPAT) instead the EBIT. For Czech business and accountant environment is the using NOPAT or called as *Corrected operating income* is advisable.

Following table specifies corrections of operating income to get FCFF according current Czech accountant standards.

FCFF – Free Cash Flow to the firm	
1	Corrected operating income (NOPBT – net operating profit before tax)
2	− Tax of operating income
3	**Corrected operating income (NOPAT – net operating profit after tax)**
4	Non cash operations
5	− Depreciation of long term assets (without depreciation of operating not needed assets)
6	− Change in reserve balance
7	− Change in accrual basis balance
8	− Change in rectifying items to long term assets balance
9	**CF from operations before working capital changes**
10	− Change in working capital
11	**CF from operations**
12	− Change in operating needed long term assets
13	**FCFF**

Table 6. Particular recipe of calculation FCFF in Czech Accountant Environment

The Cash Flow to Equity is the cumulated CF into shareholders. For the calculation DCF Equity model we use *Free Cash Flows to Equity (FCFE),* which formula can be written as:

FCFE = Net Income + Depreciation – Capital Expenditures – Preferred Dividends – working capital change – principal repayments (3).

Following table specifies corrections of operating income to get FCFE according current Czech accountant standards.

FCFE – Free Cash Flows to the Equity	
1	**Corrected operating income (NOPBT – net operating profit before tax)**
2	− Expenses interest

3	**Corrected earnings before tax**
4	− Tax of corrected earnings
5	**Corrected earnings after tax**
6	Non cash operations
7	− Depreciation of long term assets (without depreciation of operating not needed assets)
8	− Change in reserve balance
9	− Change in accrual basis balance
10	− Change in rectifying items to long term assets balance
9	**CF from operations before working capital changes**
11	− Change in working capital
12	**CF from operations**
13	− Change in operating needed long term assets
14	**Net Cash Flow**
15	− Dividend payment and shares on profits paid
16	**FCFE**

Table 7. Particular recipe of calculation FCFE in Czech Accountant Environment

3.5.2.2. Discount rates

Debt and equity are the basic sources of external financing the company. In the DCF Entity model we use FCFF, which are cumulated CFs into all holders and creditors. The *Costs of Capital* can be from this point of view considered as *Weighted Average Costs of Capital (WACC)* and the *discount rate* should be established on this level. Basic formula of WACC may be written as:

$$WACC = r_d (1-t)\frac{D}{C} + r_e \frac{E}{C}$$

where r_d = *Costs of Debt; t = tax rate; D = Debts; E = Equity; C = Capital;* r_e = *Costs of Equity.*

To determine right *Costs of Debt* we have to know also Risk Free Rate and the Debt Premium, gearing and taxes. For determination the *Costs of Equity* is widely use the Capital Assets Pricing Model (CAPM), what can be written as:

$$r_e = r_f + \beta \cdot E\left(R_m - r_f\right) \quad \text{where,}$$

r_f = *Risk free rate* (The long-term government bond rate is the appropriate risk free rate.)

β = *Beta Factor* (The non-diversifiable risk for any asset can be measured by the covariance of its returns with returns on a market index.)

$E(R_m - r_f)$ = *Equity Risk Premium* (The risk premium vary across the markets, depending upon their riskiness. Premiums are estimated form historical data, what can be in certain countries and markets unreliable. Alternatively we can use country bond ratings.)

Discount rate for model DCF Equity is related to FCFE – Cash flows only for holders of a firm. From this point of view is Discount rate estimated value of *Costs of Equity* connected with certain debt level (14).

3.5.2.3. Expected Growth

In a practise we can meet three ways of estimating future growth. The first one is to look into historical data of the company and use the past growth rate as continuous. Other way suggests a firm to obtain information about expected growth from more informed source.

The third method estimates the expected growth on the base of two variables that are determined by the firm, which is the subject of appraisement. They answered the questions – how much earnings are reinvested back into the firm and how well those earnings are reinvested (5).

"In the equity valuation model, this expected growth rate is a product of the retention ratio, i.e. the proportion of net income not paid out to stockholders, and the return on equity on the projects taken with that money. In the firm valuation model, the expected growth rate is a product of the reinvestment rate, which is the proportion of after-tax operating income that goes into net new investments and the return on capital earned on these investments." (4)

3.5.3. Nett Capitalized Return Method

This valuation approach has been developed and is quite widely used in German speaking countries. This method is going under "equity" principal, it means that return value is estimated only for (equity) holders. Authors distinguish two variants of Nett Capitalized Return approach (12).

3.5.3.1. First Variant

Here the nett return of the company should be determined on the base of division between incomes and expenditures, it means on *cash flows.* We can consider this variant as identical to *DCF Equity* (13).

3.5.3.2. Second Variant

Here the nett return of the company is derived from corrected income from operations, it means from division between earnings (returns) and costs. This method is advisable to use when we are not able to estimate the range and time duration of investment. Then we can valuate the company on the base of corrected incomes from operations, where planned investments are projected as depreciation (12).

3.5.4. Compound Return Valuation

These methods compound together Return and Property analysis methods. They are also used mainly in German speaking countries.

3.5.4.1. Mean Value Method

Mean value is giving us the average value between return value (calculated usually with use of *Nett Capitalized Return method*) and substance value (the lowest value of a company). Mean value is calculated usually under “equity” principal.

3.5.4.2. Nett Capitalized Extraordinary Return Method

The value of a company is understood as distinction between return value and substance value. The value can be then written as:

$$H_n = S_n + \frac{NR - i_c \cdot S_n}{i_{c2}} \quad \text{where,}$$

H_n = The value of equity while a extraordinary return is constantly gained,

S_n = Netto substance value

NR = Nett Return

i_c = Interest rate of contributed capital (12).

3.5.5. Economic Value Added (EVA) Valuation

The EVA approach appears from logic, that company value consists of two basic parts. The first is the range of capital invested into company by shareholders and creditors expressed in accountancy. The present value of future economic added value creates the second part. (10).

3.5.5.1. EVA calculation

The Economic Value Added (EVA) is a measure of surplus value created on an investment. This can be written as:

EVA = (Return on Capital – Costs of Capital)(Capital Invested in Project)*

or as:

*EVA = NOPAT – WACC *Capital* where,

NOPAT = Net operating profit after tax

WACC = Weighted average cost of capital

Capital = Capital invested.

Value of mentioned above capital is related into assets, which are necessary to gain operating profit. Then capital parameter can be expressed also as *net operating assets (NOA).* Subsequently the EVA formula can be written:

$$EVA_t = NOPAT_t - WACC_t * NOA_{t-1} \quad \text{where,}$$

NOA = Net operating assets

The EVA valuation method partially uses an accountancy data. These data doesn´t express accrual the economic reality. To avoid possible imperfections, we have to convert the accountant model (expression of company reality in accountant data) to the economic model. This converse can be defined in following steps:

- Conversion into operating assets. – Basic accountant forms don't distinguish operating assets and non operating assets. Changes occur mainly with elimination of non operating assets (sale of property or reserves implications) and in activation of items, which are not booked in accountancy.

- Conversion of financial data. – This conversion being done in purpose to complete the accountant financial data into data which give us the real and full expression of company finance. For example an increase in NOPAT of lease interest payments.

- Tax conversion. – This changes appear from difference between NOPAT and accountant income from operations.

- Equity conversion. – Analysts have to consider during the NOA calculation the items which are not currently booked in accountancy (e.g. some parts of intangible assets). Subsequently changes have to occur also on the liability side (e.g. increase of capital).(12)

3.5.5.2. The use EVA as valuation method

EVA valuation method appears from logic that shareholders value of a company and market value of a company are identically same. Then this *market vale* (further *MV*) express present value of net investors yields, which appear share holding. MV consists of dividend payments and of payments from third side into investor (as payments related to sale and purchase the shares).

We can estimate the Market value of capital (equity) subsequently:

MV of capital (equity) = MV of operating assets + MV of non operating assets – MV of liabilities (debts).

Market value of operating assets is the sum of NOA and the value added.

3.5.5.3. Market value added (MVA)

MVA is the present value of future EVA. Relation between EVA and MVA can be defined that EVA measures the success of company during last year and MVA express the future of a company perspective and market expectations.

3.6. Market Analysis Methods

3.6.1. Market Capitalization Method

The fundamental of this method is the presumption of existing market price of shares. When we multiply the current share price with number of shares, we get the *Market Capitalization.*

But this price doesn´t (even it seems to) express the Market Value of the company. First problem is the considering only small number of shares, which purchase or sale has been realized in last quarter. In the case of sale of more than 50% is the price of share different, usually higher. This premium on price share has three basic explanations:

- Shares are overpaid (this can occur during imperfections on market)

- Premium is the extra charge for possibility to control the company
- Agency Costs
- In the case of synergy, the increase in value of companies involved can be source of premium (14).

3.6.2. Relative Valuation

In relative valuation, the value of an asset is derived from the pricing of "comparable" assets, standardized using a common variable (3). Relative valuation is much more likely to reflect market perceptions and moods than discounted cash flow valuation.

3.6.2.1. Similar Public Company Methods

This model uses as "comparable" or similar assets other companies that are usually in the same business that company being valued. This would imply companies with similar cash flows, risk and growth potential. In this approach analysts try to choose and identified two or three companies that look almost exactly like the company being valued and than to get their market values based upon share prices. Consequently the shares of chosen companies are public traded on stock exchange. Than analysts convert these market values into standardized values, since the absolute values cannot be compared. This process creates price multiples (4).

To choose right two or three "comparable" companies requires following analysis:

- Analysis of the national and international economy with focus on growth rate, discount rates, inflation rates, etc.
- Analysis of the sector where valued company operate.
- Analysis of current situation and present progress of a company (mainly a progress in turnovers, market position and market share, product position, and competitive advantages)
- In depth financial analysis of company being valued (12).

Principal of a multiple

The multiple is the proportion of market value (share price) to some relation value (ratio). The most widely used ratio is *Price Earning Ratio (P/E ratio).*

P/E = Market price per share / Earnings per share

Than we have to assess the certain ratio for all "comparable" companies and we determinate the average ratio of this peer companies group. If we picked up the P/E ratio as the average value (ratio) of the companies group, than we can estimate the market price (share price) of company being valued subsequently:

$H_{A(P/E)} = Z_{(OP)} * A(P/E)$, where

$H_{A(P/E)}$ = Estimation of market price per share of company being valued

$Z_{(OP)}$ = Earning per share calculated for company being valued

$A(P/E)$ = Average value of P/E ratio of group of "comparable" companies

Structure of a multiple

Share prices can be standardized using a common variable such as earnings, cash flows, book value or revenues.

Earnings multiples	• P/E ratio • Enterprise value / EBIT • Enterprise value / EBITDA • Enterprise value / Cash flow
Book Value Multiple	• Price per share / Book value (of Equity) (PBV) • Enterprise Value / Book value of Assets • Enterprise Value / Replacement Costs
Revenues	• Price per share / Sales per Share (PS • Value / Sales
Industry Specific Variable	• Price per share / know-how • Price per ton of steel

Table 8. Structure and review of multiples (5)

3.6.2.2. Recent acquisitions Methods

This method has basically similar procedure of valuation as the previous method with few distinctions. The first is that we can calculate the multiples on the base of truly paid prices of recently sold “comparable” companies. Secondly we can get the value of all company instead of value per share (4).

Recent acquisition valuation is suitable for smaller firm appraisement. Majority of companies consider different legal forms then join stock company, which shares are free traded on the market.

3.7. Property Analysis Methods

Property valuation can be divided in relation to certain characteristics of valuation of individual items and to expectation of continuation of company being valued. Considered going concern principal, the valuation is based on reproduction prices. If there is no continuation expectation, we get the liquidation value (break-up value).

3.7.1. Break up value

Break up value is used in particular for appraisement of a firm with limited life, than for valuation of loss-making enterprise, for estimation the lowest value of the company and can be useful with decision making between dissolution or rescue a firm. Break up value can be also considered as a ratio of capital employed collateral for investors. Break up value depends on speed of dissolution of a firm and if the liquidation occurs under pressure from creditors´ side.

Break up value = Revenues from sold property – Expenditures for extinction of debt – Costs of liquidation

3.7.2. Substance Value based on reproduction costs

The purpose of this method is to get answer on seemingly simply question: "How much would cost the reconstruction of company being valued in current prices?" This valuation considers the going concern principal.

We can distinguish substance value:

- *Brutto substance value = current reproduction costs of the (or similar) property – Amortization.*
- *Netto substance value = Brutto substance value – Debts.*

Substance value can be divided according to assets contained:

- *Entire substance value* considering all tangible and intangible assets. To contain all intangible assets (know how, relations with customers and suppliers, goodwill, and so on) is very complicated in practise and it occurs only rarely.
- *Incomplete substance value* considering all separately definable and flexible assets (tangible and intangible).

Here is also important to note, that reproduction costs and its amortization are use for valuation of operative necessary assets. For assets which are not indispensable for business we don't look for reproduction costs. In this case we are seeking for selling price of these indispensable assets. This method of valuation has a limited importance between valuation methods (12).

Substance value as a type of objectified value can find following use:
• A base for estimation of collateral range
• Valuation of share in Ltd.
• Added data for return analysis methods of valuation
• A part of estimation the company value. Combined methods are used mostly in continental Europe.

• The basis of goodwill valuation
• Entire substance value determine the highest value of company being valued

Table 9. The use of substance value

3.7.3. Substance Value based on costs saving

This method is advisable to use during buy or built decision making. If we suppose probable level of future returns, the company value (company being bought) results from its ability to substitute all expenses relate for building new company. "Substance value based on costs saving is quantitative determination of substitute effect of existing assets. (12)"

Within this valuation method the assets are not valued as individual items, this method works only with cash flows related to property items. Cost saving substance value is based on supposed business plan and the value of company is derived from following principles:

- relation to future business and cash flows
- valuation of a company as entire company
- subjective point of view (subjective future plans)

4. Analysis of banking environment and credit conditions

4.1. Banking sector influence on corporate finance

The company decision making process precede analysis of economic and financial environment. Banking sector is the significant player in financial and economic environment and analysis of current situation enables to see conditions and possibilities of bank products as sources of corporate finance.

4.1.1. Basic indicators of economic situation

Performance of the economy is usually measured by gross domestic product ratio.

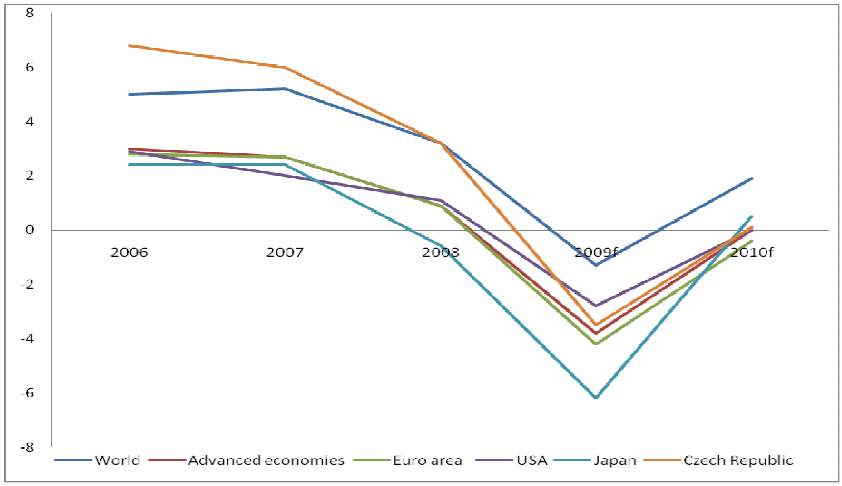


Chart 1. GDP development. Source CNB

The global financial crisis, which has been started in half of 2007 in United States and subsequently has captured some west developed economies, in 2008 transferred to other economies including the Czech one. This situation evoked the fear about bank attitudes towards traditional portfolio, especially towards small and middle enterprises. In consequence of drop in foreign demand and of global tightening of financial conditions, the Czech economic growth became markedly slow down in second half of 2008. The performance of economy is influenced by businesses profitability and also by interest rates of capital employed (loans).

Fiscal and monetary policy of banking sector has a significant impact to economy through interest rates.

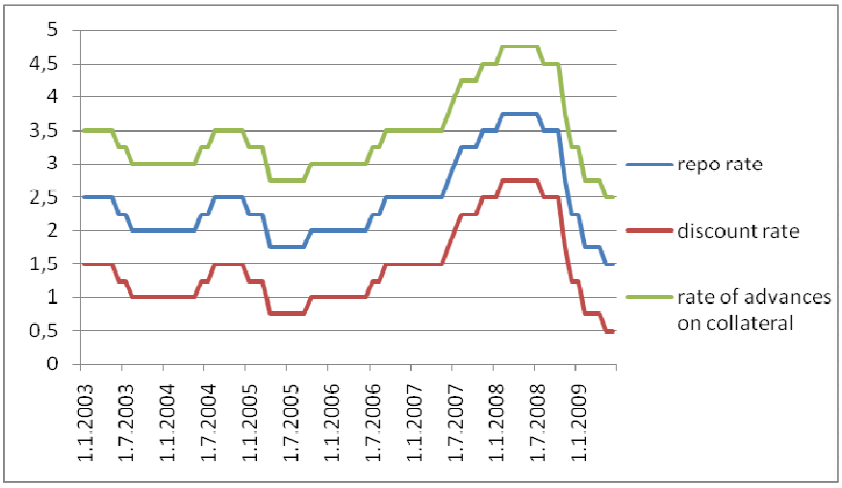


Chart 2; Basic Czech interest rates; Source: ČNB

After the growth of interest rates in 2007 and 2008 the basic interest rates have became slump at the end of 2008. It was the reaction of Czech National Bank to decreasing demand in an effort to keep stability in financial sector.

Profitability of businesses in 2008 dropped down in comparing to previous year. Next chart shows the progress of some key financial indicators for non-financial corporations.

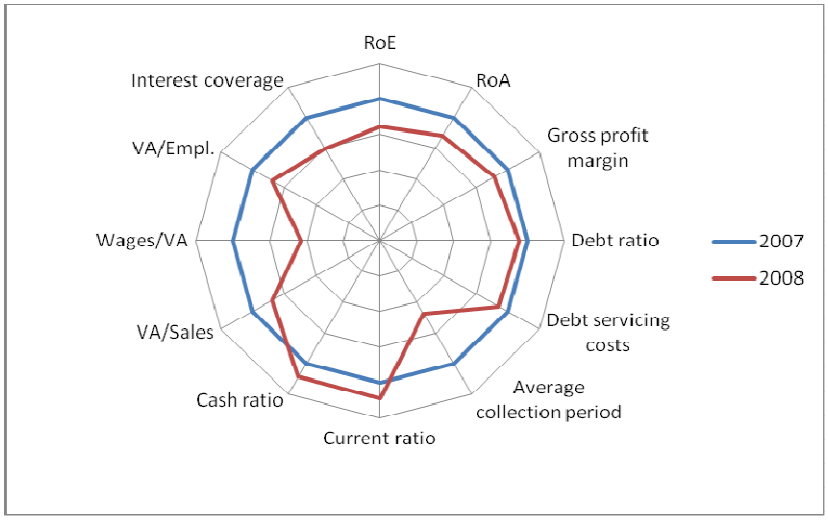


Chart 3; Key financial indicators for non-financial corporations; Source: ARAD, ČNB

4.1.2. Indicators of credit policy of commercial banks

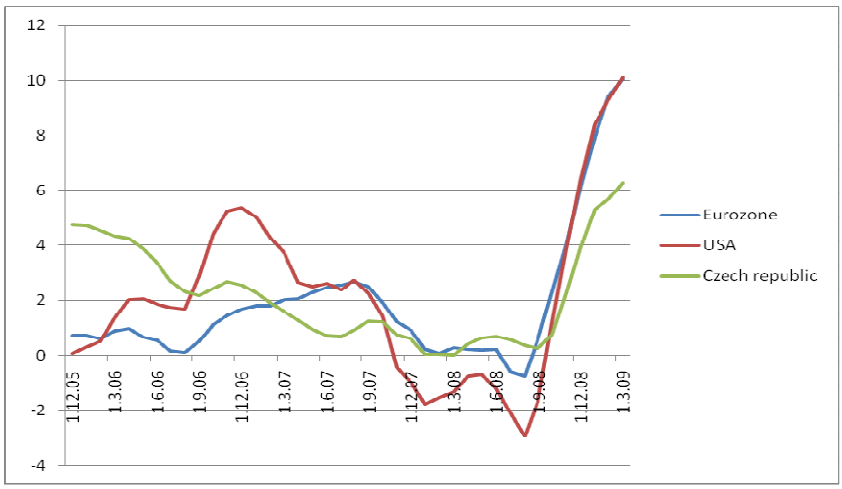


Chart 4. Real interest rate on corporate debt[1]*;. Source Merrill Lynch Corporate Indices, Thomson Datastream*

In an effort to sustain stability and liquidity of financial sector, Czech commercial banks responded through tightening of all three dimensions of financial conditions: volume of loans (respectively new issued loans), interest rates (higher loan rate) and non-interest conditions (financial collateral or the requirement for part of own sources of project).

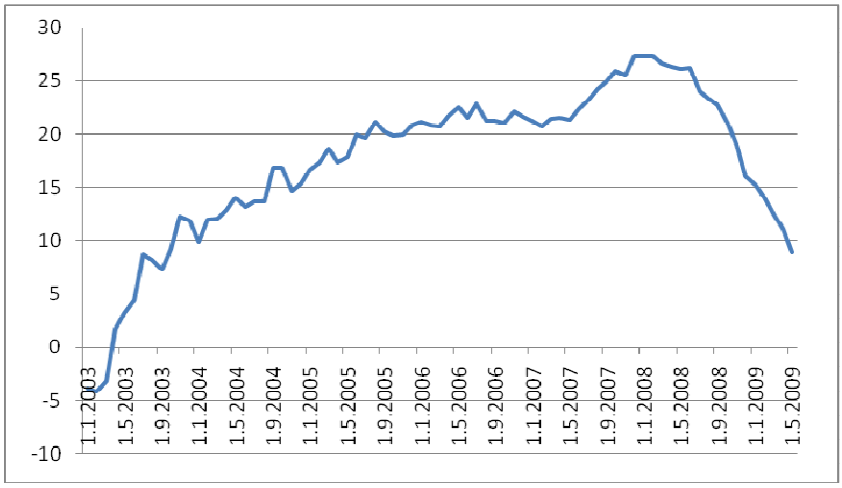


Chart 5. The volume of new issued loan; Source: ARAD, ČNB

[1] Note: Corporate bond yields in the euro area and the USA and interest rates on long-term corporate loans in the Czech Republic adjusted for current producer price inflation.

This approach influenced also the volume of provided loans into Czech private sector. Development of credits has been decreasing since second half of 2008, as can be seen in chart 5.

The amount of new issued loans for businesses has marked similar progress as total amount of new issued loans. The development of amount of corporate deposits most likely copied the loans one, as can be seen in chart 6.

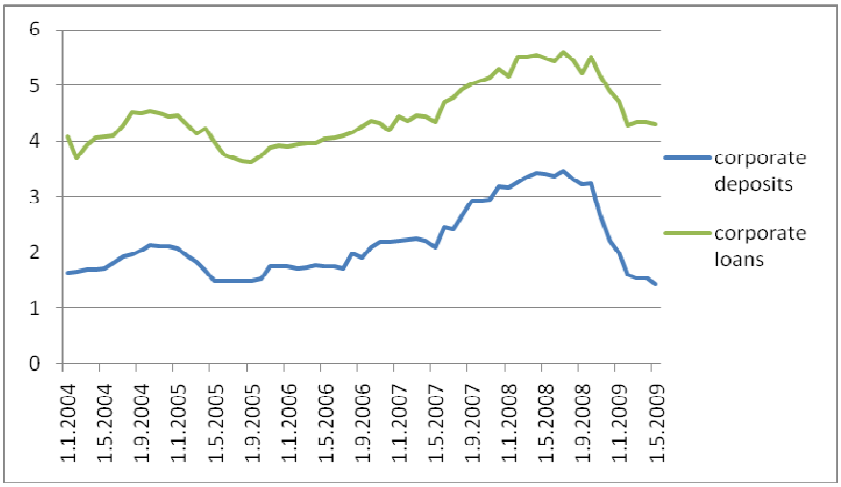


Chart 6 The corporate deposits and loans; Source: ČNB.

From the businesses point of view, the mentioned above data express the unpleasant conditions for them.

The critical situation on financial markets is connected with high aversion to riskiness, what has negative impact on market financial instrument sources of corporate finance (e.g. bonds, shares and other papers).At the time of uncertainty of markets, clients prefer more secure traditional financial instruments. They prefer bank financing. It posses banks as the primary source of external finance and give them appropriate power.

Despite of uncertainty of financial markets, to increase of overdue loans or default loans and to significant currency swings, the Czech financial sector thanks to unpleasant proceedings stands pretty well. This stability supports: the low rate of toxic assets, low amount of loans in foreign currencies, good liquidation balance and enough volume of capital.

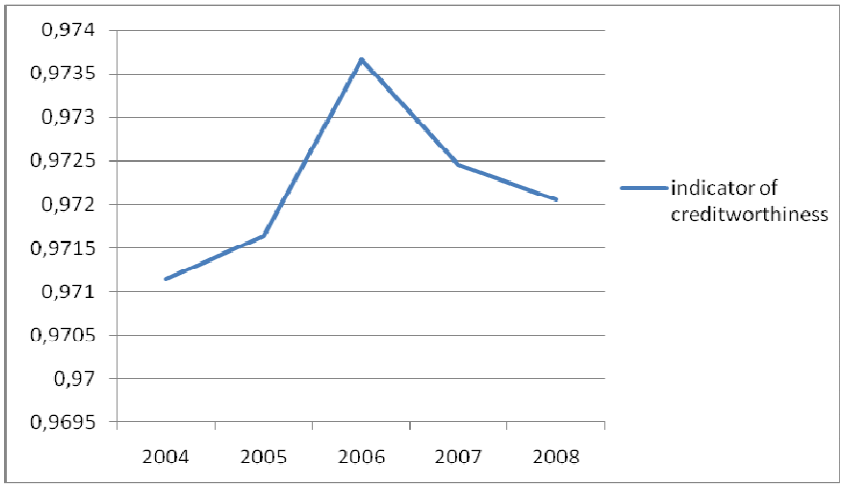


Chart 7; Creditworthiness of non financial corporations; Source: ARAD, ČNB

Also the non- interest conditions became to be more tighten, as can be seen in chart 7 which express the development of clients creditworthiness. Tighten collateral requirement or demand for complicity on projects financing also doesn´t facilitate credit procedures.

Access to bank credit is limited by *non-interest conditions* especially for small and middle young businesses and for innovative technically sophisticated projects. Generally these companies are not able to fulfil a sharpened collateral requirement. Second reason of credit proceeding failure lies in short-term existence of businesses.

Managers´ personal collateral is not often sufficient and the young companies often dispose unsatisfactory capital what could serve as material collateral (movable property or real estate, eventually government bonds or claims). Does it seem to be for you as limited possibilities of credit collateral? The next chapter describes the possibilities of credit collateral.

4.1.3. Legislative limits of credit collateral possibilities

The ordinance No. 282/2008 Sb. (22) admits following techniques of reducing credit risk and conditions of collateral eligibility. This enactment distinguishes material collateral according to certain approach.

Material collateral is distinguished according to range of use firstly to material collateral eligible for all approaches and secondly to material collateral eligible for Internal Rating (IRB) approach.

4.1.3.1. IRB Approach

Banks in the framework of IRB system recognize four material collateral instruments:

- real estates
- claims
- movables
- properties in the lease

As material collateral by the *real estates* may be recognized: residential: buildings owed by the beneficial owner; shares of Finnish residential housing companies; non-residential buildings from Member states; shares of Finnish housing companies.

As material collateral can be recognized *claims* which generated from business transactions or other transactions with term of expirations is less than 1 year. Bank cannot accept as collateral: claims against debtors´ employees; claims connected with securitization, sub participation or credit derivative; claims against economically connected subjects.

Movables are accepted: if the liquid market exists and enables to quick and effective realization; if the market prices of movables are public and available (22).

4.1.3.2. All approaches

Banks in the framework of all approaches accept as material collateral:

- clearing
- financial collateral

Clearing for the reducing credit risk purpose can be accepted in form of clearing connected with claims and liabilities, than as clearing of repo transactions, papers transactions and commodity or margin transactions.

In the framework of all approaches banks may recognized as *financial collateral:* cash or credit linked notes; monetary gold; debt certificates issued by governments or central banks registered in rating agencies; debt certificates issued by institutions registered in rating agencies; debt certificates issued by others registered in rating agencies; debt certificates with short term rating; debt certificates without external rating issued by institutions which are quoted on the stock exchange; shares and obligations comprised in Px; shares in investment funds if their current prices are daily published (22).

4.1.4. Conditions for granting loans

4.1.4.2. Czech banks

On Czech financial market operate 37 banks which 30 of them are with foreign major implication. Most of these banks are granting loans, some of them are specialized only on mortgage transactions. These banks are willing to granting business loans with different purposes. These loans can be divided into four groups.

The first group of products of business loan considers loan for operations. Banks are willing to borrow money with personal collateral or movables, claims or very common instrument of collateral is blank bill.

The second group contain specific loans and revolving loans. Collateral here is dependent on the amount of loan and on expiration time. This group of loans are mid

term. Banks accept as collateral personal guarantee, claims, real estates and sometimes also movables.

Third are mortgage loans with real estates as collateral.

The fourth group are loans for project financing. Here banks accept as collateral real estates, claims and specific movables. In the case of development projects are few of banks able to accept also business shares.

	CSOB	Hypotecni Banka	Unicredit Bank	Raiffeisen Bank	Ceska Sporitelna	Volksbank	Oberbank	Komercni Banka	GE Money Bank
1. group	blank bill personal guarantee real estate …		blank bill personal guarantee …	claims personal guarantee movables …	claims personal guarantee …	blank bill personal guarantee claims …		bill personal guarantee claims …	bill claims real estates …
2. group	claims real estate movables guarantee …		bill guarantee real estate …	real estate movables …	claims guarantee real estates …	claims movables real estates …		claims movables real estates …	claims real estates …
3. group	real estate	real estate	real estate	real estate	real estates	real estates	real estates	real estates	real estates
4. group	movables business shares real estate …	real estate	real estate business shares claims …	real estate …	real estates business shares claims …	real estates claims …	real estates …	real estates business shares …	real estates …

Table 10. Accepted collateral in Czech banks; Source: Own research

Amount of loan, interest rates, time expiration and conditions of loan drawdown and payments are consulted individually with focus on clients needs.

To get a loan has two aspects: satisfaction the common conditions and individual bargain. Today´s situation is unfavourable to get a loan, as is mentioned above: creditworthiness is dropping also the amount of new issued loans, corporate loans and interest rates were increasing and non interest conditions have been tightened up. The model of one dominant financing bank can help to applicant for a loan. Non interest conditions are mostly the reason for rejection of request for a loan.

[…] Banks are willing to individually communicate other collateral instruments.

4.1.4.2. European banks

In Western European countries is the current situation around granting loans also not very pleasant for businesses. Financial crisis hit the Western European Institutions intensively than in Czech Republic and banks reacted on that also with tightening of credit conditions.

In the second quarter of 2009, the net percentage of reporting banks a tightening of credit standards for loans to enterprises broadly dropped. The net tightening of price and non-price terms and conditions on loans to enterprises declined in the second quarter of 2009, what can be seen at chart 8 (19).

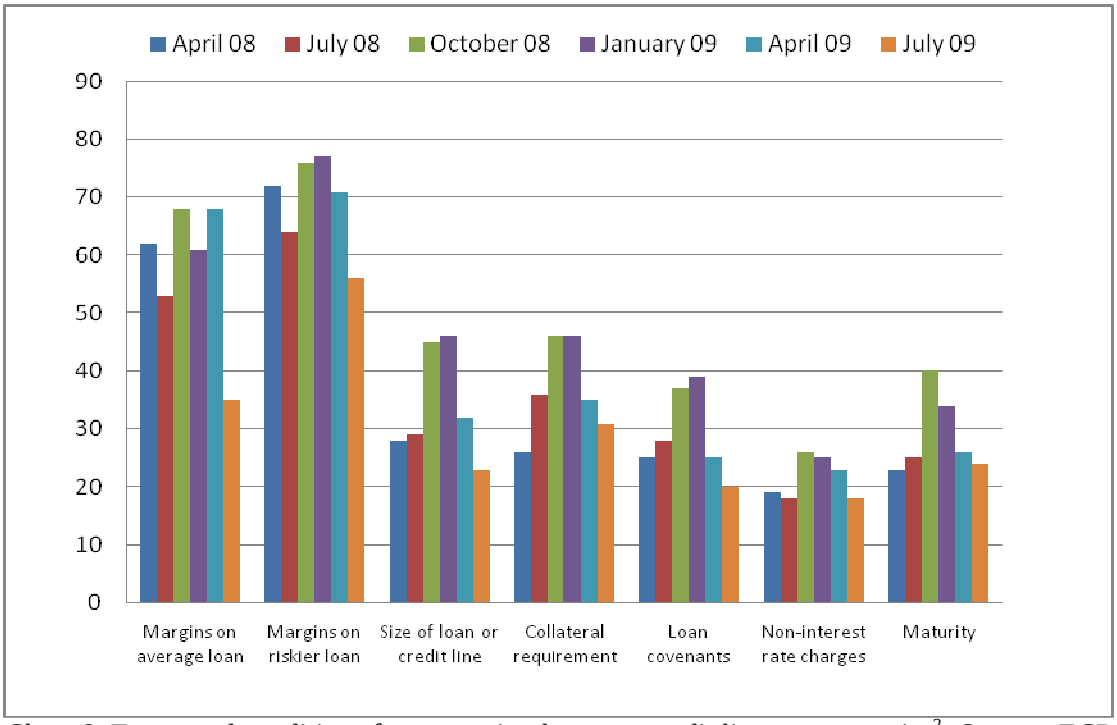


Chart 8, Terms and conditions for approving loans or credit lines to enterprise[2]; Source: ECB

According to Cushman & Wakefield research more than half of 83 responded big banks are not willing to grant loan with commercial real estates as collateral. The rest of responded banks borrow to reliable clients which dispose quality real estates with

[2] Notes: Ratios are expressed in netP (net percentage). *The net percentage is defined as the difference between the sum of the percentages of banks responding" tightened considerably" and "tightened somewhat", and the sum of the percentages of banks responding "eased somewhat" and "eased considerably".*

strong contracts of lease. Except the decline of new borrowers also the LTV (loan to value) fall down In United Kingdom the LTV fall from 80% - 85% to 60%-70% of estimated value of real estate. In Western Europe has been the decline more apparent from 85% - 90% to 50% - 60%. In Czech Republic is the current LTV around 65%.

Banks which are willing to borrow finance are more cautious and require more detailed information business plans, which are in detail checked. Easier position has stable clients with history on the market and with appropriate capital.

4.2. Widely accepted methods of company valuation in banking practise

4.2.1. Banking practise in Czech Republic

Legislative limits for loan collateral derive the methods of company valuation for purpose to get banking financing. The ordinance determines material collateral accepted in the IRB approach and also for all approaches. The result of this legislative limitation is the acceptance of claims, movables, bills and other certain papers and real estates as collateral. Some banks are also willing to accept as collateral business shares but also for developing projects, what means that the base of this business share is again real estate. Consequently the *property analysis methods* are practically only the methods accepted in Czech banking practise.

Property analysis methods consider the valuation of individual items balance sheet. This valuation overestimates these items into market prices. Each group of items balance sheet is specifically valued.

4.2.1.1. Property revaluation of real estates

Objective assessment of real estate value takes into account technical, economical and market aspects of real estate. To consider all these factors are used three commonly accepted methods: comparative, revenue and material (12).

- *Comparative* method lies in comparing certain amount of realized sales of similar real estates. Main comparable factors are here: location, area, technical conditions, equipment, age and so on. The main task is to gain information about realized sales of similar real estates in relative time.

- *Revenue* method is determined from the encashment rent. The value can be calculated as present value of discounted net revenue from encashment rent.

- *Material* method estimates how much would cost the reconstruction of the real estate in current prices minus amortization. The ordinance No. 279/1997Sb. includes the procedures of material valuation methods and also the prices for (practically) all parts (constructions) of all real estates (21).

Each bank also imposes requirements on real estates as collateral and on the method of their valuation. Real estate has to satisfy following conditions (principles):

- The subject of transaction is the loan. Real estate is only collateral serving for decrease of credit risk.

- Real estate has to be able keep its value for long time.

- Real estate has to be saleable for the case when debtor cannot pay the liabilities. Realized selling price from right of lien is usually lower.

Banks can estimate the real estate collateral value with the help of internal workers or they can gain the objective value of real estate with the help of external appraiser or Expert Institute. Appraiser or External Institute has to dispose with licence in evaluation of real estates.

4.2.1.2. Valuation of other tangible property

This chapter distinguish two basic groups of tangible property. The first group considers machines and enginery. The second consider material, goods, inventory and others (12).

Valuation of machines and enginery is specific discipline which requires appropriate technical education and additionally economical education. Procedures of this valuation are based on standards issued by Forensic engineering Institute in Brno. This valuation provides appraisers or Expert Institutes with licence in evaluation in movables.

Valuation of inventory can be divided into accountant valuation methods (LIFO, FIFO and average techniques) or on the base of reproduction prices (12).

4.2.1.3. Valuation of claims

Claims valuation technique is dependent on the purpose of valuation. In the case of assignment of claims to bank or use claims as collateral, are accepted three basic valuation methods: revenue, cost and comparative (12).

- *Revenue method* is based on estimation of future cash flows from the claim and their discount into present value. This method is the most widely use and theoretically can estimate the most accurate value.
- Cost method can be used, but really in extreme case.
- Comparative method is theoretically possible, but practically can´t be applied, because each claim is specific and searching for similar claims which were assigned is nearly impossible.

In the practise appraisers don't only calculate the value on the base of nominal value, future cash flows and discount rate, they also considers legal situation of relevant documents, than collateral of claim and the financial standing of debtor.

Claim valuation providers are bank workers, whose estimate the value for internal needs of bank or they check and compare their estimation with estimation of claim value provided by appraiser or Expert Institute. Appraisers and Expert Institute has to dispose with licence in evaluation of claims. These subjects are usually focused on company valuation and dispose with appropriate license.

4.2.1.4. Valuation of financial assets

Concerning cash, short term papers and shares or long term papers and shares the valuation can use the accountant techniques (papers are in accountancy valued in purchase price) or comparative and revenue methods of valuation.

- Cash are considered in their nominal value. Foreign currencies are transformed according to exchange rates of national banks.

- Papers traded on stock exchange are valued every day on the market. Papers which are not traded on the stock exchange can be comparatively estimated. Non traded debt certificates can be valued on the base of revenue method (12).

Seeing that legal limits for financial collateral which allow only paper traded on stock exchange and debt certificates, the comparative method is not using in practise. Financial assets valuation for bank internal needs is done by bank workers. Bank can also entrust appraiser with estimation debt certificate value by the revenue method. Appraiser and Expert Institute have to dispose with appropriate licence.

4.2.3. European banking practise

Despite the financial crisis, the tightened terms and conditions for approval credit to enterprises are decreasing and experts expect further slow decline in tightening of term and conditions for approval loans. European banks are willing to borrow money against real estates (less against commercial real estates), claims, movables, papers and business shares.

The first four collateral instruments are accepted similarly as in Czech Republic. They are transformed into market value through different valuation methods as is mentioned above. Likewise Czech banks, also the European use the internal bank valuation for banks´ needs and also for checking or comparing with value estimated by appraiser or Expert Institute. As well as Czech, the European appraisers and Expert Institutes can provide the valuation only with appropriate licence.

Besides these collateral instruments, Western European banks are willing to approve loan against business shares as collateral on the base of detailed analysis of business plan. *Business plan* analysis and detailed financial analysis are essential for valuation of a company respective its share by *discounted cash flow method*. DCF method is broadly used in Anglo-Saxon cultures.

4.3. Introduction of company being valued towards to get a loan

4.3.1. Company Introduction

Business name:	ABC Brno, s.r.o.
Legal form:	Limited liability company, registered at County court in Brno.
Firm domicile:	Zimní 902, Brno 614 00, Czech Republic
ID:	13526908
Basic capital:	100 000 CZK
Commencement date:	21st September 1995

On the date of valuation firm doesn't register any capital participation.

4.3.1.1 Subject of enterprise according to certificate of incorporation

- metal-working
- smithery
- wholesaling

4.3.1.2. History and present description of ABC Brno, s.r.o.

ABC, s.r.o was set in 1995 as a subsidiary of ABC Brno Group holding with domicile in Eidhoven (Netherlands). The rise of company has been due besides to

economical aspects also to Dutch owners´ interest about qualified and skilled working potential in region.

Subsequently the company focused on production of precise mechanic components especially for foreign clients. Successively company rose to become a producer of sophisticated mechanic components into flight, space, medical, electro technical and other equipment. All production targets abroad. Target markets are mainly: Germany, Netherlands, United Kingdom, Switzerland, France and Canada.

Currently ABC Brno employs 75 employee and dispose with modern enginery on the 1450 square meters of process area. Production process use special software and quality control system conform to ČSN EN ISO 9001:2001 certificated at Airbus Deutschland GmbH, further to ČSN EN 9001:2003 certificated by Honeywell corporation.

ABC Brno arrived at current level in complicated competition especially with foreign firms and under pressure of clients which require high quality, high speed of production process, flexibility and reliability. This industry sector imposes difficult conditions on qualification and experience of employees, further on technical equipment and on technological procedures of a firm. Continual effort of ABC Brno, s.r.o. to keep competitive advantage lies in the seeking of optimal automation of production, in application modern technology support and also in development of new approaches for preparation and for realization of production process.

Management of subsidiary ABC Brno, s.r.o. made decision to **30 % business share** from foreign business partner. This partner is wiling to sell his share in amount 30 000 000 CZK. The task for financial manager is to get appropriate financial resources for surrender 30% business share (30 000 000 CZK).

4.3.1.3. Markets being operated with ABC Brno, s.r.o.

Firms´ production is focused especially on foreign markets (Germany, France, UK, etc.). Production mix composites of wide range of flight and pace components, accurate medical components, components of special measuring instruments. They still efforts to extend the production mix. Between their key customers can be mentioned:

AIRBUS DEUTSCHLAND GmbH., BAE Systems, EADS Transportation, SIGPACK SYSTEMS, EMERSON, TESAT, PHILIPS, THALES, EATON, BOSCH, PARKER HANIFIN, FEI, ECS EUTELSAT and others. Honeywell Aerospace and Pratt and Whitney are considering the cooperation with ABC Brno, s.r.o. Despite the decline in industrial production across these markets, key clients are strong companies successively fighting with financial crisis or using government support instruments.

4.3.2. Conclusions of SWOT analysis

STRENGTHS	**WEAKNESSES**
wide production mix good geographic coverage in region south and middle Morava, Vysočina high quality of production flexibility of supplies rising capacity of production own logistical coverage providing full service to client	limitation of size of products dependence on material suppliers dependence on few key clients
OPPORTUNITIES	**THRETS**
using the EU programs using the government supports of industry expansion of flight production in CZ demand for accurate components in measuring technologies slowly revival of industrial production	mergers and acquisitions of competition vertical integration of flight machinery producers substitutability

Table 11. SWOT analysis overview. Source: Own research.

Mentioned above SWOT analysis confirm the presumption of stable percentage market share proportionally dependent on the growth of volume "Production transportation equipment" market. Significant product advantage firm doesn't show. It follows that volume of ABC Brno sales correlates with growth in sector.

5. Appraisement of ABC Brno, s.r.o. towards to get a loan

5.1. General presumptions for the valuation ABC Brno, s.r.o.

Before the appraisement lets assume general legal, economic and others presumptions considered in financial plan:

- Considered period
- Legal form
- Tax policy
- Economic and law system
- Inflation
- Accounting principles

5.1.1. Considered period

Prognosis of proven financial plan consider period from 30th June 2009 till 31st December 2013. This period doesn't express the time duration of a company. According to financial plan will be the development of company stable in 2013 (especially the growth of sales, investment and so on). Following years (after 2013) are modelled as perpetuity.

5.1.2. Legal form

ABC Brno, s.r.o. is company with limited liability according to Czech Commercial Code and other related law.

5.1.3. Tax policy

For the valuation based on historic economic outcomes of company (period from 2005 till 2009) we can use average income tax rate at the level of 24%. Income tax rate development shows decreasing progress. Currently is the tax rate 20% and it is supposed another decrease for income tax. Next year will be this rate 19%. According to KPMG research has the income tax decreasing progress. For the following period we

can consider the income tax rate on the level **19%.** Even the income tax will decline, the other taxes – especially consume tax – will rise.

5.1.4. Economic and law system

We don't presuppose significant changes in present economic and law environment, which could have an impact on commercial statement of a company. Market economic policy will continue. After certain time of economic convergence with European Union, we can presume the adoption of Euro. Previous plan for adopting Euro in 2010 are not real thanks to recent crisis. Grittier plans talks about 2012 as about the year of adoption, the others consider later year. At the convergence period, we can expect higher correlation of CZK/EUR exchange rate, than to others currencies.

5.1.5. Inflation

Inflation in July 2009 reached 3,1 % according to Czech Statistic Bureau measures. Czech national bank same as ECB tries to keep financial stability and inflation target. According to May prognosis will be annual increment in 3Q/O9 1, 3 % and in 4Q 1,7%. Estimated long term inflation can be considered in **2% p.a.**

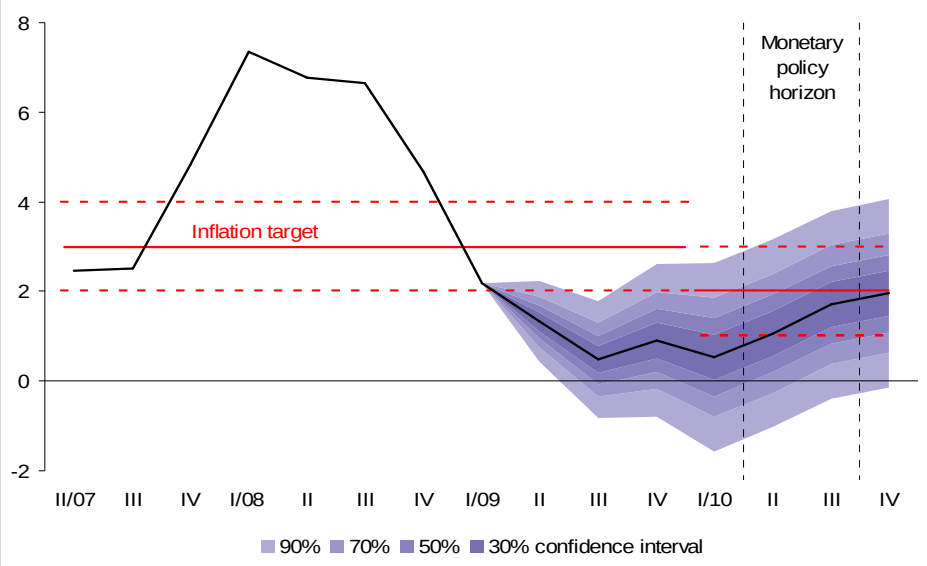


Chart 9, Actual and projected inflation in Czech Republic. Source: ČNB

5.1.6. Accounting principles

For the valuation we suppose that all available accounting data are in compliance with Czech Accounting principles.

5.2. Specific presumptions of financial plan

Financial plan has been elaborated by renowned institute KPMG for company need until the year 2013. Following valuation of ABC Brno is based on this financial plan and on my additional information. Further the valuation also results from balances to 31st December 2005, 31st December 2006, 31st December 2007, 31st December 2008 and 30th June 2009.

5.2.1 Sales and Costs

5.2.1.1. Sales

Basic parameters of projection sales plan are: expected volume of goods sales, other operating incomes, other financial incomes and expected volume of future investment.

5.2.1.2. Costs

Prognosis of operating costs includes: consumption from operations, labour and other costs, tax and fees, other operating costs, other financial costs.

5.2.2. Working capital

The volume of working capital belongs to financial plan. Its calculations elaborate the KPMG institute. Working capital (WC) is estimated on the base of average turnover time from past period (2005 – 2009). Regarding to absence of factors influencing assets turnover (e.g. stable structure of suppliers, clients and stable amount of stocks) is the WC estimated as turnover average. This implies stabilization of WC development and its changes are related to changes in sales and operating costs.

The part of WC is not calculation of operating needed cash, because ABC Brno doesn’t register any cash, which is not meant for operations. Higher account balance has investment purposes planned at 2009.

	2005	2006	2007	2008	6.IX	2009	2010	2011	2012	2013
Current liabilities	2 803	7 267	8 993	12 346	11 634	16 029	20 451	8 656	7 173	7 543
Operating needed cash	5 545	8 519	10 024	17 158	17 528	0	0	0	16 064	39 231
Liquidity for 1st instance	1,978	1,172	1,115	1,39	1,507	0	0	0	2,24	5,201
Change	n.a.	-2 974	-1 505	-7 134	-370	17 528	0	0	-16 064	-23 167

Table 12. Working capital.

5.2.3. Investment expenditures

Investment policy influences the effort to get rising return of capital invested. Investment is focused on reconstruction of enginery and expansion into new locations. Finally are these financial sources targeted into areas with cutting costs and growing production potential. For the period (2009 – 2013) is planned investment in total amount 80 000 th. CZK. 30 000 th.CZK will be used until the end of 2009. In 2010 will be spend 20 000 th. CZK and in 2011-2013 will be invested 30 000 th. CZK.

5.2.4. Debt resources

On the date of valuation ABC Brno doesn't register any long term or short term banking loans. In the period of financial plan ABC Brno is not going to use charged external sources for their operations. Rational owner of company would however use the external sources at higher level than at none. Regarding to capital structure optimizing we can use optimal debt ratio of business sector. Debt ratio is derived from relation between own and external financial sources. This ratio is according to A. Damodaran 36,89% (costs of these sources are 6,50%).

5.2.5. Terminal period

For the calculation of cash flows in period after 2013 (terminal period) we accepted following presumptions:

- volume of sales in 2013
- growth rate 6,64%

*CF (2011) =[Corrected EBIT (2010) *(1- tax) – CAPEX] * (1+growth rate)* where,

tax = planned tax rate in 2013;

Growth rate = perpetuity growth rate;

CAPEX = capital expenditures (net investment into tangible and non-tangible assets and into working capital).

Investment for the perpetuity period are higher than depreciation value thanks to volume of net investment, which will finance 6,64% growth rate in perpetuity period.

Capital expenditures (CAPEX) suppose that return of new net investment is at least same high as costs of capital. The rate of new investments is 39,15% from the profit after tax. Following table shows the calculation of operation capital return. In future period we can expect increasing development.

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Operating income	-2 051	-1 761	6 383	8 918	13 298	16 912	21 715	27 336	35 727
Fixed assets	7 041	5 912	5 288	11 590	35 961	48 333	49 704	50 367	52 367
Capital participation	0	0	0	0	0	0	0	0	0
Short term assets	28 632	26 179	30 018	33 912	25 844	30 264	32 916	51 455	77 344
Short term liabilities	2 803	7 267	8 993	12 346	16 029	20 451	8 656	7 173	7 543
Cash	5 545	8 519	10 024	17 158	0	0	0	16 064	39 231
Operation capital return	-7,51%	-10,80%	39,19%	55,74%	29,05%	29,09%	29,36%	34,79%	43,08%

Table 13, Operation capital return., Source: Financial prospects

5.2.6. Planned growth rate of ABC Brno for financial plan period and for perpetuity

Growth rate for financial plan and perpetuity period implies from influencing factors as follows:

5.2.6.1. Expected inflation rate

Expected long term inflation rate is estimated on **2% p.a**. This is explained in chapter 5.1.5. Inflation.

5.2.6.2. Expected GDP growth rate

Expected rate of GDP in Czech Republic and in EU is determined on the base of Ministry of finance prognosis.

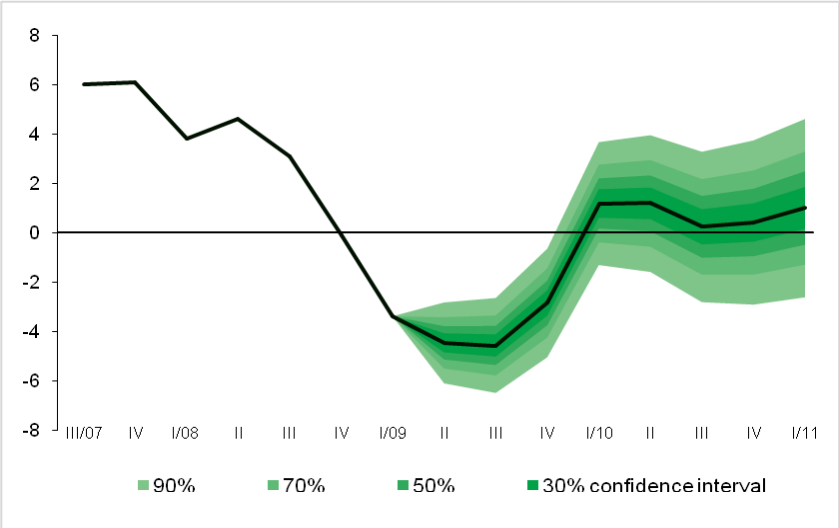


Chart 10, Actual and projected Czech GDP, Source: CNB

Prognosis in 2009 expect decline 3,9%, in 2010 increase 0,7% and in 2011 may be real the annual increase 2,2,%. European analysts are more sceptical on development of GDP in EU. Forecast for 2009 expects 4% decline and in 2010 still decline 0,1% (Source: Eurostat). Comparing Czech and European forecasts, the Czech GDP will grow faster than European growth rate. The average of historical and expected growth rate in period 1996-2011 is **2,6%** annual increment in Czech Republic and for period 1999 – 2010 is **1,6%** annual increment (measured for EU 27).

5.2.6.3. Expected growth rate of sales for the financial plan period

In following table are mentioned historical data of sales value in sector "Transportation facilities production" and sales of ABC Brno, s.r.o. including their comparison.

Sales in mil. CZK	2004	2005	2006	2007	2008	Average 2004-2008
Transportation facilities production	310 943	334 746	381 791	446 581	544 180	403 648
Growth rate%	n. a.	7,66%	14,05%	16,97%	21,85%	15,13%

ABC Brno, s.r.o.	53	49	64	71	91	66
Growth rate%	n. a.	-8,57%	31,95%	10,55%	27,91%	15,46%
Share of ABC in sector	0,02%	0,01%	0,02%	0,02%	0,02%	0,02%
Nominal GDP growth rate %	9,22%	6,01%	7,99%	9,72%	4,82%	7,55%
Difference between rate of nominal GDP and sector	n.a.	-1,65%	-6,06%	-7,25%	-17,03%	-8,0%

Table 14. Historic sales in business sector, Source: ECB, Financial prospects

From the table follows, that considered business sector in financial plan period mentioned rising progress until the year 2008, the average raise is 15,13% p.a. (2004 – 2008). Here is also necessary to note, that "Transportation facilities" sector includes huge range of producers with different business activities. ABC Brno is more likely producer of components for aerospace and flight industry. Mentioned above sales consider industry growth rate on Czech market. This is not target market for ABC Brno, because its production is focused on export. That is the reason for limited usage of this parameter in company valuation.

From the table also follows that in 2005 and 2006 company suffered losses because of expanding production and higher volume of reinvestment. Excluding these complicated years ABC Brno sales noted increasing progress. Comparing to all sector, the market share of company is in average 0,02%. This minimal share is influenced by the fact, that "Transport facilities" sector includes also car and automotive producers like Škoda Auto, a.s.(TPCA Kolín).

	2009	2010	2011	2012	2013	Average 2009-2013
Sales of ABC Brno	91 284	114 105	127 797	140 577	154 635	125 680
Growth rate %	11,04%	25,00%	12,00%	10,00%	10,00%	13,61%

Table 15, Planned sale, Source: Financial prospective

The sales growth according to financial plan is 11,04 % in 2009 resp. 25% in 2008. This growth rate exceeds the growth rate of nominal GDP rate.

Financial plan being used for valuation of ABC Brno, s.r.o. is in compliance with expected GDP growth and with sector growth. The financial plan keeps also market

share of ABC Brno. If the market share of company is consistent, we can assume the comparison of company and sector/nominal GDP growth rate as acceptable.

5.2.6.4. Expected growth rate of sales for perpetuity period

The growth rate in perpetuity period (after 2013) is analogously planned on the base of long term expected inflation (2% p.a.) topped by average historical expected GDP growth rate until 2013. To this we add one quarter of difference between sales growth of ABC Brno and GDP growth (1,81%). Pursuant to submitted long term contracts of key buyers we can consider this growing progress as real, despite the global downturn in economic activity.

Than we can estimate for perpetuity period growth rate in amount (2% + 2,83%+1,81%) = **6,64% p.a.**

5.3. Valuation methods used

Consider the variants reflecting the rate of return and consider the requirement of rational investor who is taking in account the risk related to this investment has been chosen the return valuation method, concretely *discounted cash flows method*. It inclines to the opinion respected by specialists and experts community that, companies continuous in their operations should be valued on the base of expected return, respectively on the base of perspective and prognosis.

Nett capitalization return method has been chosen as the second way of valuation 100% business share of company. This method considers above all the value of past economic outcomes, which are corrected into comparable real level. The ground for valuation using this method is: profit and loss account, balance sheet, respectively corrected operating income after tax.

5.4. Nett Capitalization Return method

This method considers especially past economic outcomes, which are subsequently corrected. In contrast to DCF, this method leans on past outcomes.

As entry parameters of Net capitalization return method can be used:

- permanently (perpetuity) removable return
- Cost of capital (discount rate)

5.4.1. Assessment of permanently removable return

Economic outcomes of ABC Brno determined to 31st December 2005, 31st December 2006, 31st December 2007, 31st December 2008 and 30th June 2009 are the base for calculation so called permanently removable return. Outcomes in 2009 are considered for whole year. Removable net return is necessary to consider as the volume of resources, which can be allocated into owners (shareholders). These resources can be allocated without any changes in fundamentals of a company. At the same time we suppose no creation of reserves from profit. Further we suppose that, firm will keep only the volume of resources which is necessary. All net return (corrected profit) will be allocated.

Further we consider the operating income includes the depreciation of long term assets on the level their reproduction price. In the valuation is used accountant depreciation, what expresses the reproduction value of assets better than tax depreciation. This is keeping the value of long term assets.

The net removable return value is the income from operations corrected with created reserves, sales, depreciated price of sold long term assets (material) and taxation. Income tax noted decreasing progress in Czech Republic (28% - 04; 26%- 05; 24% - 06; 24% - 07; 21% - 08; 20% - 09). For this valuation I have decided to use the average percentage of taxation for all period being considered in valuation, it means **24%.** Permanent removable return is transferred into current prices thanks to Consumer Price Index.

From the founded value of permanently removable return in each year we can calculate the weighted average net permanently removable return. The weights are chosen according to significance of past economic outcomes. The first year of considered period has weight 10% (because of time distance), the following two years has the weight 7,5% (because of worse economic outcomes and expanding of production capacity), other years have the weight 25%.

	2004	2005	2006	2007	2008	2009
Operating income	10793	-2051	-1761	6383	8918	3153
Change in reserve balance and	0	0	0	127	114	500
Sales from long term assets and material	2556	614	511	1039	1512	1285
Depreciated price of sold long term assets	0	0	207	520	711	446
Costs interest	922	624	325	282	252	3
Permanent removable return before tax	7 315	-3 289	-2 390	5 709	7 979	2 811
Income tax	24%	24%	24%	24%	24%	24%
Permanent removable return after tax	5 559	-2 500	-1 816	4 339	6 064	2 136
Inflation	2.8%	1,90%	2,50%	2,80%	6,30%	1,10%
Permanent removable return after tax at current prices	6 415	-2 831	-2007	4 663	6 131	2 125
Weight of net permanent removable return	10%	7,5%	7,5%	25%	25%	25%
Weighted average of permanent removable return						**2 867**

Table 16, Permanent removable net return of ABC Brno, s.r.o. in thousands CZK;
Source: Internal data

5.4.2. Conclusions to appraisement of ABC Brno with using the Nett Capitalization Return Method

Taking in account all presumptions (legal, economic, operating and others) the average value of permanent removable return for period 2004 – 2009 is (on the date 31.7.2009) 2 867 th. CZK. The cost of capital (*discount rate*) is **16,91%** p.a. as has been used in calculation of DCF valuation as costs of capital rate for the period of perpetuity.

Further there is necessary to consider also the non-operating part of firms´ assets, claims and capital participation. From this point of view, ABC Brno registers in their

accountancy (on the date of valuation) only *long term claims*. Consequently the value of non-operating property is 199 th. CZK.

The value of ABC Brno, s.r.o. while using Nett Capitalization Return method is on the date of valuation **16 754 th. CZK.**

Company value = 16 953 – 199

This method doesn't reflect the future potential of company therefore it serves in this case only as additional data.

5.5. Discounted cash flows method

5.5.1 Entry parameters

As the key valuation method in this case has been chosen discounted cash flows method, because it takes into account above all the value of future cash flows.

5.5.1.1. Discount rate – approximation of costs of capital

For the determination of costs of capital is necessary to set:

- Costs of equity
- Costs of foreign capital.

Weighted average costs of capital (WACC) have been determined through using so called iteration.

5.5.1.2. Discount rate – Costs of equity

For the determination of costs of equity is necessary to know:

- Risk free rate
- Beta factor

- Risk premium
- Country risk premium
- Size and market capitalization risk premium
- Specific risk premium

Risk free rate

In July 2009 the yield of long term bonds in Czech Republic with time expiration in 9th December 2022 were fixed on 5,69 % for purchase and 5,46% for sale. For the assessment of discount rate is used as the risk free rate the yield for sale, so **5,46% p.a.**

Title	Price		Yield until the expiration time		Expiration time
	purchase	sale	purchase	sale	
ST.DLUHOP. 3,25/09	100,3	100,8	2,09%	0,33%	27.11.2009
ST.DLUHOP. 6,40/10	102,4	103,4	2,60%	1,13%	14.4.2010
ST.DLUHOP. 2,55/10	100,2	101,2	2,37%	1,50%	18.10.2010
ST.DLUHOP. 6,55/11	107,8	108,8	2,72%	2,26%	10.5.2011
ST.DLUHOP. 4,10/11	101,9	102,9	2,89%	2,28%	4.11.2011
ST.DLUHOP. 3,55/12	99,3	101,3	3,79%	3,11%	18.10.2012
ST.DLUHOP. 3,70/13	99,8	101,8	3,75%	3,19%	16.6.2013
ST.DLUHOP. 3,80/15	99,1	101,1	3,98%	3,58%	4.11.2015
ST.DLUHOP. 6,95/16	115,2	117,2	4,20%	3,87%	26.1.2016
ST.DLUHOP. VAR/16	95,6	97,6	5,12%	4,78%	27.10.2016
ST.DLUHOP. 4,00/17	94,8	96,8	4,83%	4,50%	4.11.2017
ST.DLUHOP. 4,60/18	96,6	98,6	5,08%	4,80%	18.8.2018
ST.DLUHOP. 5,00/19	97,9	99,9	5,28%	5,01%	15.4.2019
ST.DLUHOP. 3,75/20	85,7	87,7	5,51%	5,24%	9.12.2020
ST.DLUHOP. 4,70/22	91	93	5,69%	**5,46%**	9.12.2022
ST.DLUHOP. 4,20/36	80	83	5,65%	5,40%	12.4.2036
ST.DLUHOP. 4,85/57	85	95	5,78%	5,13%	26.11.2057

Table 17. Yield of long term bonds. Source: www.patria.cz

Beta factor

ABC Brno, s.r.o. falls within the sector “Production and service of airplanes and spaceships” (OKEČ 35 30) according to methodology OKEČ (Sector classification of economic activities). This classification is comparable with US SIC methodology, whereas ABC Brno falls within the sector “Aerospace/Defence – Equipment”.

Market	Industry	Number of firms	Beta	D/E ratio
European	Aerospace and Defence	27	1,02	36,89

Table 18.Clear of debt Beta factor by sector, Source: http://pages.stern.nyu.edu/~adamodar/

For the estimation of the debt ratio of ABC, s.r.o for each year is necessary to consider fact, that company for last few years haven't been financed from bank loans. Financing of company without bank loans is supposed also in financial (business) plan, which is elaborated until 2013. For the period of perpetuity is estimated the debt ratio on the base of average similar firms debt ratio in this sector. The debt ratio for ABC Brno is estimated at 26,95 %.

Risk premium

This premium can be calculated as the difference between shares yield (e.g. S&P 500 index) and government securities (Stocks – T.Bonds) for the period 1928 – 2008. This risk premium is **5,19% p.a.,** its volume is appropriate estimation of future risk premium. (Source: *http://pages.stern.nyu.edu/~adamodar/*).

Country risk premium

In the case of calculation discount rate of foreign risk free return and foreign return is used the market index, then is necessary to consider the country risk premium (12). Country risk premium can be also used in the case of calculation local risk free profitability. This premium as based on the rating of country and on volatility of shares and bonds markets yield. Long term rating of Czech Republic is A1 – so called default spread is for than 140 bps. We can estimate an adjusted country risk premium by multiplying the default spread by the relative equity market volatility for that market. Global volatility of shares market comparing to volatility of securities market is 1,5 (http://pages.stern.nyu.edu/~adamodar/) . For the calculation can be used following formula:

*Country risk premium = Relative volatility * (country default spread/10000)*

After the substitution current values we can estimate the *Czech Republic risk premium* as **2,1% p.a.**

Size and market capitalization risk premium

The legal form of company being valued is Ltd, that´s why we cannot determine its market capitalization as the conjunction of number of shares and their market price. Ltd ABC Brno creates authorized capital 100 000 CZK. This volume doesn't correspond to real market value of company. Consequently we can use the volume of equity whose fundamentals better reflect the market capitalization.

Ibbotson Associates in their publication 2004 Valuation Yearbook (8) transform this risk premium in classification businesses according their size. Considering the size ABC Brno can be classified as the business with micro capitalization. For the period 2009 and following periods consider the size and market capitalization risk premium at **4,01% p**.a. as follows in table 15.

Decile	Market capitalization of Smallest Company (in millions $)	Market capitalization of Largest Company (in millions $)	Size Premium (Return in Excess of CAPM)
Mid-Cap. 3-5	1167,04	4794,027	0,91%
Low-Cap. 6-8	330,797	1166,799	1,70%
Micro-Cap. 9-10	0,332	330,608	**4,01%**
Breakdown of Deciles 1-10			
1 - Largest	11444,104	286638,305	-0,34%
2	4809,422	11366,767	0,50%
3	2592,978	4794,027	0,67%
4	1723,907	2585,984	1,11%
5	1167,04	1720,959	1,36%
6	797,302	1166,799	1,59%
7	508,21	795,983	1,57%
8	330,797	507,82	2,25%
9	166,445	330,608	2,90%
10 - Smallest	0,332	166,414	6,34%
Breakdown of the 10th Decile			
10a	96,961	166,414	4,50%
10b	0,332	96,928	9,82%

Table 19, Size and market capitalization premium. Source:Ibbotson Associates

Now we decided to use size and market capitalization risk premium for ABC Brno at 4,01% p.a. which correspond to companies which size of market capitalization varies between 0,332 – 330, 698 mil. USD respectively 6 003,888 th. CZK – 5 980 342,632 th. CZK (at 31.7.2009 was exchange rate according to CNB 18,084 CZK per USD). Valued company is relatively small in compare to big companies quoted on U.S. stock exchanges, what is base for existing study. ABC Brno is comparatively small to competition at the sector "Aerospace/Defence – Equipment" according to US SIC methodology.

ABC Brno thanks to its size will be classified into 10b decile. This decile includes companies which size of market capitalization varies between 6 003,888 th. CZK - 1 752 845,952 th. CZK. So than we should consider the size and market capitalization risk premium at the level **9,28% p.a.**

From the mentioned above facts results:

- The market capitalization risk premium at the level 4,01% p.a. corresponds to average value of companies, which size of market capitalization varies between 003,888 th. CZK – 5 980 342,632 th. CZK. With accurate observance of Ibbotson Associates methodology should be the size and market capitalization risk premium at the level of 9,28% p.a. (decile 10b).

- Market capitalization premium is not comparison of difference between company riskiness with the biggest capitalization to ABC Brno, because the companies with biggest capitalization (decile 1) can be assigned the market capitalization premium at minus level. (-0,34% p.a.).

For the estimation of market capitalization premium we choose more conservative approach and we classify ABC Brno into subjects with micro capitalization (than 9-10 decile). Consequently we choose appropriate risk premium at the level 4,01%. Any lower premium should correspond to subjects classified in 9th decile with size of market capitalization higher than 3 009 991,38 th. CZK. Roughly it would correspond to companies with market capitalization much higher than for ABC Brno.

Table 19 results from statistics of size premium on the U.S. market. For discount rate calculation is used beta factor of European companies. Here also exists the probability, that European companies determining the beta factors can be smaller than U.S. companies determining data at table 19. Consequently level of MC risk premium should be corrected. We can compare average size of companies included in beta statistics on U.S. and European markets. The difference between both markets is minimal (see table 20).

Market	Average market capitalization in th. USD
European market	4 244,12
U.S. market	5 517,85
% difference	76,92%

Table 20: Average market capitalization. Source: http://pages.stern.nyu.edu/~adamodar/

Each class for the size of market capitalization can be consequently converts also for the European companies. They are easily corrected by the difference as follows in table 21.

Decile	Market capitalization of Smallest Company (in millions $)	Market capitalization of Largest Company (in millions $)	Size Premium (Return in Excess of CAPM)
Mid-Cap. 3-5	897,64	3 687,38	0,91%
Low-Cap. 6-8	254,44	897,46	1,70%
Micro-Cap. 9-10	0,26	254,29	4,01%
Breakdown of Deciles 1-10			
1 - Largest	8 802,37	220 471,21	-0,34%
2	3 699,22	8 742,88	0,50%
3	1 994,42	3 687,38	0,67%
4	1 325,96	1 989,04	1,11%
5	897,64	1 323,70	1,36%
6	613,25	897,46	1,59%
7	390,9	612,24	1,57%
8	254,44	390,6	2,25%
9	128,02	254,29	2,90%
10 - Smallest	0,26	128	6,34%
Breakdown of the 10th Decile			
10a	74,58	128	4,50%
10b	0,26	74,55	9,82%

Table 21, Corrected size and market capitalization risk premium. Source: Ibbotson Associates.

U.S. market probably comprises companies with higher capitalization, simultaneously also includes bigger amount of companies with standard capitalization, what decrease the difference in average capitalization. This acknowledges also the calculation of premium, when for companies with the biggest capitalization assigns negative value, so it declines the discount rate. Considering mentioned above relations, we can suppose this methodology as appropriate for correction of European beta factor.

ABC Brno is classified with high reserve into 10th decile with premium 9,28% p.a. which biggest capitalization is 1 752 845,952 th. CZK and it is surely classified in interval with correction 4,01% and with highest capitalization 5 980 342,632 th. CZK. Value is not balancing on the edge of these intervals, that´s why another additional correction is not necessary.

From the complex point of view on discount rate and used parameters for valuation, can be final discount factor considered as consistent and adequate to rational investors expectations. Regarding the market share of ABC Brno and existing strengths and weaknesses and also regarding to positive development of past economic outcomes and overcast of its continuing, we can suppose this discount rate as balanced.

Final calculation

The above values can be instated into following formula:

*Minimal required rate of return = Risk free rate + β * (risk premium and country risk premium) + market capitalization premium + specific risk premium.*

So than:

*Minimal required rate of return = 5,46 + 1,02 * (5,19 + 2,1) + 4,01 = 16,91%.*

The minimal required rate of return (CAPM Method) has been estimated for ABC Brno, s.r.o. **16,91% p.a.**

5.5.1.3. Discount rate – Costs of foreign capital

In perpetuity phase of synthetic rating method is considering the relation between operating income and costs of foreign capital. Thanks to this relation is established synthetic rating (e.g. AAA, BBB, and so on). Consequently with regards to risk free rate and risk premium are estimated supposed costs of foreign capital. ABC Brno, s.r.o. has been classified as AAA with adequate premium at the level **0,75%.** Costs of foreign capital vary at the level 5% for the perpetuity period.

Weighted average cost of capital

The value of WACC can be estimated on the base on above costs of equity and foreign capital and on the base of relation between own and external sources (is gain by iteration). Perpetuity considers this relation between foreign and all sources *(Debt/Equity ratio)*, which are describes in financial plan of ABC Brno, s.r.o. until the 2013. After the instalment of values, the WACC are:

Discount factor ABC Brno, s.r.o.	2009	2010	2011	2012	2013	Perpetuity
Risk free rate	5,46%	5,46%	5,46%	5,46%	5,46%	5,46%
Clear of debt Beta	1,02	1,02	1,02	1,02	1,02	1,02
Involved in debt Beta	1,02	1,02	1,02	1,02	1,02	1,32
Risk premium	5,19%	5,19%	5,19%	5,19%	5,19%	5,19%
Country risk premium	2,10%	2,10%	2,10%	2,10%	2,10%	2,10%
Size and market cap. Premium	4,01%	4,01%	4,01%	4,01%	4,01%	4,01%
Debt/Equity ratio	0,00%	0,00%	0,00%	0,00%	0,00%	36,89%
Dent/Capital ratio	0,00%	0,00%	0,00%	0,00%	0,00%	26,95%
Tax	20%	19%	19%	19%	19%	19%
Costs of interests	5%	5%	5%	5%	5%	5%
Costs of equity	16,91%	16,91%	16,91%	16,91%	16,91%	19,13%
WACC	**16,91%**	**16,91%**	**16,91%**	**16,91%**	**16,91%**	**15,06%**

Table 22. Discount factor for ABC Brno, s.r.o.

5.5.2. Estimation of FCFF

Parameter in thousand CZK	2009	2010	2011	2012	2013	Perpetuity
Income from operations	**10 146**	**16 912**	**21 716**	**27 336**	**35 726**	**38 098**
Tax	0,2O	0,19	0,19	0,19	0,19	0,19
Tax from operations	2 029	3 906	4 995	6 533	8 690	7 239
Change in deferred tax	0	0	0	0	0	0
Net operating income after tax	**8 117**	**13 006**	**16 721**	**20 803**	**27 036**	**30 860**
Depreciation	4 511	7 629	8 629	9 337	8 000	
Change in reserves	0	0	0	0	0	0
New investment	-30 000	-20 000	-10 000	-10 000	-10 000	
Change in working capital	-14 104	4 089	2 357	2 155	2 352	
Free Cash Flow to the Firm FCFF	**-31 476**	**4 724**	**17 707**	**22 295**	**27 388**	

Table 23, FCFF of ABC Brno, s.r.o. Source: Financial prospects

5.5.3. Valuation of ABC Brno, s.r.o.

Regarding all legal, economic and operating presumptions, which were the base for prognosis estimation, is the value of assets/liabilities, which have close relation on the creation of operating CF of company:

Operating effect (explicit determination of NPV)	12 089 th. CZK
Perpetuity effect (implicit determination of NPV)	247 311 th. CZK
∑	259 399 th. CZK

5.5.3.1. Valuation of assets which are not directly related to creation of operating CF

Company ABC Brno registers on the date of valuation additional cash in amount of 13 494 th. CZK. Because of very low liquidity on the date of valuation, we can consider this cash as necessary for operating activities. So there is no unnecessary cash. Further the company register non-operating assets (long term tangible property as buildings, enginery and equipment in weaned quarry) in amount of 13 654 th. CZK. Depreciation related to these properties is excluded from operating costs, so it doesn't implicate the valuation of operating part of company.

5.5.3.2. Valuation of debts

Company doesn't evident on the date of valuation any bank or other loan. Value of debts (external sources) is zero.

5.5.3.3. Final calculation

Final calculation of company value results from mentioned above partial calculations. Concrete calculation is following: value on the base of discounted cash flow with value of assets which revenues are not included into operating cash flow.

Assets/Liabilities with direct relation on creation operating CF	248 641 th CZK

Assets of company without direct relation on creating operating consider:

Unnecessary cash	0 th CZK
Non-operating assets	0 th CZK
Long term claims	-199 th CZK
Short term claims	0 th CZK
Capital participation	0 th CZK

Liabilities of company, which cash flows are not in the range of operating cash flow considered:

Value of debts	0 th CZK
Valuation results	259 200 th CZK

5.5.4. Conclusions to valuation of ABC Brno, s.r.o. with using DCF method

The value of 100% business share of company ABC Brno, s.r.o. is according to DCF method on the date of valuation 259 200 thousands CZK.

5.6. Resolution of valuation methods being used

Appraisement of ABC Brno is based on external data (economic forecasts, statistic data, sector analysis) and internal data provided by ABC Brno, s.r.o (account sheets, financial plan prepared by KPMG, information from interview with financial manager ABC Brno, s.r.o.). The value of net business property ABC Brno, s.r.o. has been estimated on the date of valuation by following valuation methods:

Valuation method	Value
Discounted cash flow method	259 200 000,- Kč
Net capitalization method	16 754 000,- Kč

Regarding to opinion, which is widely accepted by expert public, is the value of reasonable collateral estimated with **discounted cash flow method**. This method is in contrast to net capitalization method real valuation of company considering planned economic contribution to shareholders and considering the riskiness of economic sector.

Company is operating on the Hi Tech field with high added value to products. With respect to future sales under contract, extension of production capacity, continuous principle of company, stabilization of company after transformation into different sector and considering reliable financial plan we suppose that this method represent the best market potential of company.

Net capitalization return method uses the historic economic outcomes of company. This is appropriate for companies with stable economic activity. It means companies which are not expecting changes in operations and their depreciation on the level of its reproduction prices. In ABC Brno case this method doesn't reflect future potential. From this reason we consider this method as additional.

Book value of equity is on the date of valuation 38 329 th. CZK. Book value of equity has only statistic character same as values estimated by other property analysis methods. These methods don't reflect future potential of company, profitability or riskiness of economic sector.

6. Conclusions

The objective of ABC Brno, s.r.o. was to obtain appropriate financing for the purpose of surrender 30% business share, which belongs to foreign partner. For this purpose the financial manager chose bank loan as adequate source for this transaction. Pursuant to his decision has been done analysis of banking environment and credit conditions for getting loan with following results. Banking approach to granting loans and credit conditions have been recently somewhat tightened comparing to previous periods. This is implication of current persisting uncertainty related to financial crisis. Banks consequently requires collateral or participation on loans.

Within Czech banking sector are collateral possibilities limited also by legislation. According to law they can accept as collateral business shares of companies only being quoted on Prague Stock Exchange (Px). Further they are willing to grant a credit secured by business property, which value is estimated on the base of assets revaluation. European banks are willing among others to discuss business share as credit collateral of companies, which are not quoted on Stock Exchanges. ABC Brno, s.r.o. belongs to this companies´ category.

Obtaining propriate loan required business share collateral. Therefore has been necessary to determine adequate valuation method of 100% business share of ABC Brno, s.r.o. Regarding to future potential of company based on elaborated financial plan has been chosen the discount cash flow valuation method. This method considers planned economic contribution to shareholders and considering the riskiness of economic sector. ABC Brno, s.r.o. is growing company producing Hi Tech products. Further the company dispose with future sales under contract and they are going to extend production capacity. Valuation considers also continuous principle of company and stabilization of company after transformation into different sector.

After calculations has been estimated value of company based on discounted cash flow method in amount of 259 200 000 CZK.

The realization of thesis results was suggestion of appropriate banking institutions, where could company get the loan. From the mentioned above reasons

Czech banks haven’t been willing to accept collateral in amount of business share. Accordingly ABC Brno, s.r.o. address the foreign banking institute, which are able to accept collateral in form of business share and its value determined by discounted cash flow method.

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